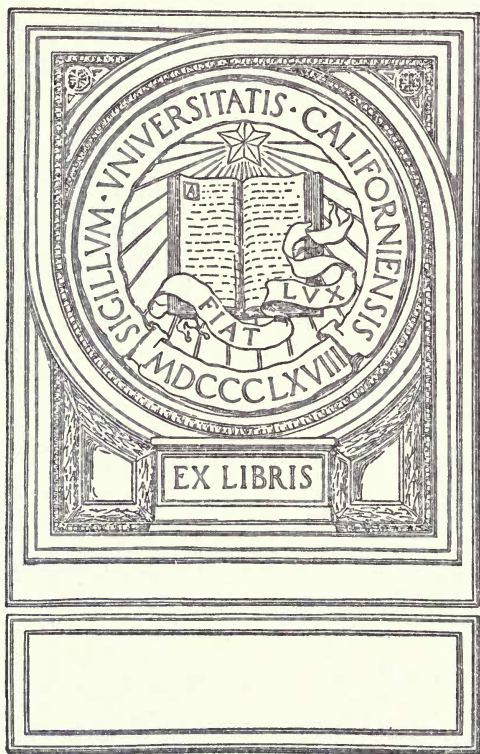


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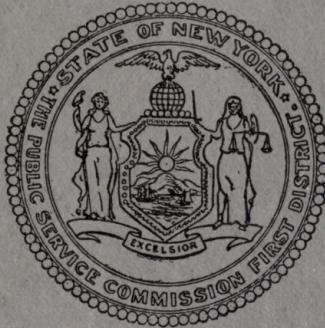








**PUBLIC SERVICE COMMISSION  
FOR THE FIRST DISTRICT**



**INVITATION TO CONTRACTORS, INFORMATION  
FOR CONTRACTORS AND FORMS OF  
CONTRACT, BOND AND CON-  
TRACTOR'S PROPOSAL**

**FOR**

**Construction of a Storm Drain for the  
QUEENSBORO SUBWAY  
RAPID TRANSIT RAILROAD**

---

Form finally adopted by the Commission October 1, 1915, and filed on Com-  
mencement of Advertisement of Invitation to Contractors.







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**PUBLIC SERVICE COMMISSION  
FOR THE FIRST DISTRICT**



**INVITATION TO CONTRACTORS, INFORMATION  
FOR CONTRACTORS AND FORMS OF  
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**FOR**

**Construction of a Storm Drain for the  
QUEENSBORO SUBWAY  
RAPID TRANSIT RAILROAD**

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**TRAVIS H. WHITNEY**

TO THE  
LIBRARY OF

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THOMAS H. WHITNEY



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## INVITATION TO CONTRACTORS

### STORM DRAIN FOR THE QUEENSBORO SUBWAY RAPID TRANSIT RAILROAD

Sealed bids or proposals for the construction of a storm drain for the Queensboro Subway Rapid Transit Railroad will be received by the Public Service Commission for the First District (hereinafter called the "Commission") at the office of the Commission at No. 154 Nassau Street, Borough of Manhattan, New York City, until the 19th day of October, 1915, at twelve fifteen (12:15) o'clock P. M., at which time and place or at a later date to be fixed by the Commission, the proposals will be publicly opened.

The said storm drain is to be a vitrified pipe drain with man-holes and connections at intervals, extending under Queens Boulevard, in the Borough of Queens, from the west abutment of the Queensboro Subway Rapid Transit Railroad, between Hill and Rawson Streets, to the east abutment of said railroad, between Carolin Street and Gosman Avenue.

The work to be done will include the care and support of surface, subsurface and overhead structures, the maintenance of traffic and the restoration of street surfaces.

The method of construction will be generally by open trench excavation.

The contractor must complete the entire work within three months from the delivery of the contract.

A fuller description of the work and other requirements, provisions and specifications are given in the Information for Contractors and in the form of contract, contract drawings, bond and Contractor's Proposal, which are to be deemed a part of this Invitation and copies of which may be inspected and purchased at said office of the Commission.

## INVITATION TO CONTRACTORS

The receipt of bids will be subject to the requirements specified in said Information for Contractors.

New York, October 1, 1915.

PUBLIC SERVICE COMMISSION FOR THE FIRST DISTRICT  
By EDWARD E. MCCALL, *Chairman*

TRAVIS H. WHITNEY, *Secretary*



## INFORMATION FOR CONTRACTORS

### STORM DRAIN FOR THE QUEENSBORO SUBWAY RAPID TRANSIT RAILROAD

The Public Service Commission for the First District (hereinafter called the "Commission"), acting for and on behalf of The City of New York (hereinafter called the "City"), invites proposals to construct a storm drain for the Queensboro Subway Rapid Transit Railroad.

The points within the City between which the said storm drain is to run and the route or routes to be followed are briefly as follows:

Beginning under the west abutment of the Queensboro Subway Rapid Transit Railroad in Queens Boulevard, in the Borough of Queens, between Hill and Rawson Streets, and extending thence easterly under Queens Boulevard to the east abutment of said railroad between Carolin Street and Gosman Avenue.

The general plan of construction calls for a vitrified pipe drain with manholes and connections at intervals.

The work under the contract will include the care and support of vaults, sewers, pipes, railroads and other surface, sub-surface and overhead structures, the maintenance of traffic and the restoration of pavements and other surfaces.

The method of construction will be generally by open trench excavation.

Bidders must examine the form of contract and the specifications and contract drawings, must visit the location of the work and inform themselves of the conditions along the line of the work and make their own estimates of the facilities and difficulties attending the execution of the work.

A fuller description of the work and other requirements, provisions, details and specifications are given in the form of

## INFORMATION FOR CONTRACTORS

contract and in the contract drawings therein referred to. Copies of the forms of contract, bond and contractor's proposal and of the contract drawings may be inspected and purchased at the office of the Commission. The forms of contract, bond and contractor's proposal and the contract drawings are to be deemed a part of this Information for Contractors.

Partial payments to the Contractor will be made as the work proceeds, as provided in the contract.

The Contractor must complete the entire work within three (3) months from the delivery of the contract.

At the time of the delivery of the contract the Contractor must furnish security to the City by depositing a bond, cash or securities, in the sum of three thousand dollars (\$3,000). As further security ten per centum (10%) of the amounts certified from time to time to be due to the Contractor will be deducted.

Sealed bids or proposals will be received at the office of the Commission at No. 154 Nassau Street, Borough of Manhattan, City of New York, until the 19th day of October, 1915, at twelve fifteen (12:15) o'clock p. m., at which time and place, or at a later date to be fixed by the Commission, the proposals will be publicly opened.

Proposals must be in the form prescribed by the Commission.

A statement, based upon the estimate of the Chief Engineer of the Commission, of the quantities of the various classes of the work and of the nature and extent as near as practicable of the work is to be found in the schedule in the form of contractor's proposal. The quantities given in such schedule are approximate only, being given as a basis for the uniform comparison of bids, and no claim is to be made against the City on account of any excess or deficiency, absolute or relative, in the same except as provided in the specifications and form of contract.

Every proposal must when submitted be enclosed in a sealed envelope endorsed "*Proposal for Constructing Storm Drain for Queensboro Subway Rapid Transit Railroad,*" and must be delivered to the Commission or its Secretary; and in the presence



## INFORMATION FOR CONTRACTORS

of the person submitting the proposal, it will be deposited in a sealed box in which all proposals will be deposited. No proposal will be received unless accompanied by a separate certified check for one thousand dollars (\$1,000) payable to the order of the Comptroller of the City and drawn upon a national or state bank or trust company satisfactory to the Commission and having its principal office in New York City. Such check must not be enclosed in the envelope containing the proposal.

*The Unit Prices must not be improperly balanced, and any bid which the Commission considers detrimental to the City's interests may be rejected.*

No proposal, after it shall have been deposited with the Commission, will be allowed to be withdrawn for any reason whatever.

The award of the contract will be made by the Commission as soon as practicable after the opening of the proposals.

Deposits made by bidders whose proposals are not accepted will be returned within three (3) days after the contract is executed and delivered and its provisions in respect of the bond or deposit are complied with, unless all proposals shall be rejected, in which event such deposits will be returned within three (3) days after such rejection. The deposit of the successful bidder will be returned when the contract is executed and delivered and its provisions in respect of the bond or deposit are complied with.

The right to reject any and all bids is reserved.

New York, October 1, 1915

PUBLIC SERVICE COMMISSION FOR THE FIRST DISTRICT

By EDWARD E. McCALL, *Chairman*

TRAVIS H. WHITNEY, *Secretary*





# Public Service Commission

For the First District



## CONTRACT

**FOR THE CONSTRUCTION OF A STORM DRAIN  
FOR THE QUEENSBORO SUBWAY  
RAPID TRANSIT RAILROAD**

APPROVED AS TO FORM THIS

DAY OF

, 1915

ACTING CORPORATION COUNSEL





# STORM DRAIN

---

## CONTRACT

STORM DRAIN—QUEENSBORO SUBWAY RAPID TRANSIT RAILROAD

**Agreement** made this                      day of                      , 1915,  
between THE CITY OF NEW YORK, hereinafter called the City,  
acting by the PUBLIC SERVICE COMMISSION FOR THE FIRST DISTRICT,  
hereinafter called the Commission, party of the first part,  
and

hereinafter called the Contractor, part \*                      of the second part.

WHEREAS the Commission in behalf of the City by due advertisement, pursuant to law, has invited contractors to submit to the Commission proposals for making this contract; and

WHEREAS the Contractor has thereupon duly submitted to the Commission a proposal, which has been accepted; and

WHEREAS the Board of Estimate and Apportionment of the City has consented to this contract;

Now, THEREFORE, in consideration of the mutual covenants and agreements hereinafter contained, and under the authority

---

\* Here insert *y* or *ies* as the case may be.

of chapter 4 of the laws of 1891 entitled "An Act to provide for Rapid Transit Railways in Cities of over One Million Inhabitants," and of the various acts amending the same, the parties do hereby, the City for itself and its successors, and the Contractor for †

and assigns,

**Agree** each with the other as follows:

---

† Here insert, if a corporation, *itself, its successors*; if a single individual, *himself, his executors, administrators*; if several individuals, *themselves jointly and severally, and their and each of their executors, administrators*.



## *CHAPTER I*

### *GENERAL PROVISIONS AND DEFINITIONS*

ARTICLE I. The Contractor agrees to construct the storm drain hereinafter described, with its appurtenances. The City agrees to pay the Contractor the sums of money hereinafter mentioned at the times and in the manner and upon the terms and conditions hereinafter set forth.

ARTICLE II. The storm drain to be constructed under this contract is for the Queensboro Subway (Steinway Tunnel) Rapid Transit Railroad as described in the contract dated March 19, 1913, known as Contract No. 3, between the City and Interborough Rapid Transit Company for additional rapid transit railroads. The location of the storm drain to be constructed under this contract is as follows:

Beginning under the west abutment of the Queensboro Subway Rapid Transit Railroad in Queens Boulevard, in the Borough of Queens, between Hill and Rawson Streets, and extending thence easterly under Queens Boulevard to the east abutment of said railroad between Carolin Street and Gosman Avenue.

The location, dimensions and other characteristics of the storm drain are given in the specifications forming a part of this contract and in the contract drawings hereinafter mentioned.

ARTICLE III. This contract is made pursuant to the Rapid Transit Act, which is to be deemed a part hereof as if it were incorporated herein.

ARTICLE IV. Titles, headings, subheadings and running headlines, tables of contents and indices are printed hereon merely for convenience and shall not be deemed to be any part of this contract for any purpose whatever.

## GENERAL PROVISIONS AND DEFINITIONS

ARTICLE V. The following words and expressions used in this contract shall, except where by the context it is clear that another meaning is intended, be construed as follows:

(1) The word "City" to mean The City of New York and any other corporation or division of government to which the ownership, rights, powers and privileges of The City of New York under the Rapid Transit Act shall hereafter come, belong or appertain.

(2) The word "Commission" to mean the Public Service Commission for the First District and any other board, body, commission, official or officials to which or to whom the powers now belonging to the said Commission in respect of the location, construction, equipment, maintenance and operation of rapid transit railroads under the provisions of the Rapid Transit Act shall, by virtue of any act or acts, hereafter pass or be held to appertain.

(3) The word "Contractor" to mean the part \* of the second part to this contract and †

and assigns and any and every person or corporation who or which shall at any time be liable in the place or for the part of the second part to perform any obligations under this contract assumed by the said part of the second part. For convenience the Contractor is hereinafter referred to as if the Contractor were an individual. The word "he" shall, as the sense may require, include "she," "it" and "they"; the word "him" shall include "her," "it" and "them"; and the word "his" shall include "her," "its" and "their."

(4) The word "Comptroller" to mean the Comptroller of the City and the officer or board to whom or to which his powers

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\* Here and in like blanks hereafter insert *y* or *ies*, as the case may be.

† Here insert, as the case may be, either *its successors* or *his executors, administrators, or their executors, administrators*.



## GENERAL PROVISIONS AND DEFINITIONS

now existing under the Rapid Transit Act shall come to appertain.

(5) The word "Engineer" to mean the Chief Engineer of the Commission or his duly authorized representative and any successor or successors duly appointed or any deputy or substitute for him who shall be appointed by the Commission or by its authority.

(6) The word "Inspector" to mean any representative of the Engineer designated by him to act as inspector.

(7) The words "Rapid Transit Act" to mean chapter 4 of the laws of 1891 as amended by chapters 102 and 556 of the laws of 1892, chapters 528 and 752 of the laws of 1894, chapter 519 of the laws of 1895, chapter 729 of the laws of 1896, chapter 616 of the laws of 1900, chapter 587 of the laws of 1901, chapters 533, 542, 544 and 584 of the laws of 1902, chapters 562 and 564 of the laws of 1904, chapters 599 and 631 of the laws of 1905, chapters 472, 606 and 607 of the laws of 1906, chapters 429 and 534 of the laws of 1907, chapter 472 of the laws of 1908, chapter 498 of the laws of 1909, chapters 205, 504, 505 and 506 of the laws of 1910, chapter 888 of the laws of 1911, chapter 226 of the laws of 1912, chapters 100, 510, 524 and 540 of the laws of 1913, chapter 118 of the laws of 1914 and chapters 534, 544, 545, 590 and 604 of the laws of 1915, or as heretofore otherwise amended.

(8) The words "Storm Drain" to mean the storm drain which the Contractor agrees by this contract to build, together with all appurtenances thereto which are to be constructed or provided by the Contractor.

(9) The word "Works" to mean all the matters and things herein agreed to be furnished or done by or on the part of the Contractor.

(10) The words "New York" to mean the City of New York according to its boundaries at the date of this contract.

## GENERAL PROVISIONS AND DEFINITIONS

(11) The words "daily newspaper" to mean any paper regularly published in New York on every day or every day except Sundays and holidays.

(12) The word "notice" to mean a written notice.

(13) The words "directed," "required," "permitted," "ordered," "designated," "prescribed" or words of like import used in the specifications or upon the drawings to mean, respectively, the direction, requirement, permission, order, designation or prescription of the Engineer, and similarly the words "approved," "acceptable," "satisfactory" or words of like import to mean respectively, approved by, or acceptable or satisfactory to, the Engineer.

(14) The word "ton" to mean the short ton of two thousand (2,000) pounds.

(15) The words "existing structure" to mean all parts of the Queensboro Subway Rapid Transit Railroad in place at the date of the delivery of this contract or installed thereafter by other contractors, the Interborough Rapid Transit Company or persons or firms employed by the Commission.

ARTICLE VI. The Contractor hereby designates Room No. \_\_\_\_\_ on the \_\_\_\_\_ floor of the building No. \_\_\_\_\_ in the Borough of \_\_\_\_\_ in the City of New York as the place where all notices, directions and other communications to the Contractor may be served, mailed or delivered. The delivering at the aforesaid place or depositing in a post-paid wrapper directed to the aforesaid place in any post-office box regularly maintained by the Post-office Department, of any notice, direction or other communication to the Contractor shall be deemed to be sufficient service thereof upon the Contractor as of the date of such delivery or deposit. Such address may be changed at any time by an instrument in writing executed and acknowledged by the Contractor and delivered to the Commission. Nothing herein con-



## GENERAL PROVISIONS AND DEFINITIONS

tained shall be deemed to preclude or render inoperative the service of any notice, direction or other communication upon the Contractor personally or, if the Contractor be a corporation, upon any officer or director thereof.

ARTICLE VII. If the Contractor shall cause any part of this contract to be performed by a sub-contractor, the provisions of this contract shall apply to such sub-contractor and his officers, agents and employees in all respects as if he and they were employees of the Contractor; and the Contractor shall not be in any manner thereby discharged from his obligations and liabilities hereunder, but shall be liable hereunder for all acts and negligence of the sub-contractor, his officers, agents and employees as if they were employees of the Contractor. The employees of the sub-contractor shall be subject to the same provisions hereof as employees of the Contractor; and the work and materials furnished by the sub-contractor shall be subject to the provisions hereof as if furnished directly by the Contractor.

ARTICLE VIII. The Contractor, before making any subcontract of the work, shall state in writing to the Commission the name of the proposed sub-contractor, the portion of the work which such sub-contractor is to do or the materials which such sub-contractor is to furnish, the place of business of such sub-contractor and such other information as the Commission may require. The Commission shall have the right to require the Contractor not to award any sub-contract to a person, firm or corporation disapproved by the Commission.

## CHAPTER II

### *WORK TO BE DONE, PRICES, ETC.*

ARTICLE IX. The Contractor shall furnish all the labor and materials, plant, power, tools, supplies and other means of construction necessary or proper for constructing and completing the Storm Drain and performing all the work which the Contractor agrees by this contract to perform in the manner and within the time hereinafter specified. He shall complete the Storm Drain and do all work and furnish all labor and materials in and about the construction of the Storm Drain to the satisfaction of the Commission and in accordance with this contract and the specifications and drawings herein mentioned at the prices herein agreed upon and fixed therefor; provided, however, that said drawings may from time to time be altered or modified as hereinafter provided.

ARTICLE X. In order to construct the Storm Drain it will be necessary to take up and relay the sidewalk and roadway pavement or other surface material and to protect, support and maintain all structures, including their foundations, and all surface and elevated railroads, monuments, sewers, water mains, gas pipes, electric subways, poles and wires, vaults, including vaults of abutting property, and other surface, subsurface and overhead structures with their appurtenances and connections as the same may be met along the route; to move, alter, readjust or rebuild sewers, water mains, gas pipes, electric subways, poles and wires, vaults, including vaults of abutting property, and other surface, subsurface and overhead structures with their appurtenances and connections; and to do all such additional and incidental work as may be necessary for the completion of the Storm Drain and the reconstruction and restoration of the street pavements and other surfaces and of all surface, subsurface and overhead structures and of all abutting property which may have been directly or indirectly affected, disturbed or injured



## WORK TO BE DONE, PRICES, ETC.

by the Contractor in the progress of the work of construction to as useful, safe, durable and good a condition as existed before construction was begun. All such work of every description, including the maintaining, protecting and securing whenever necessary of all structures of whatsoever nature, monuments and surface and elevated railroads affected by or interfered with during the construction of the Storm Drain, is part of the work which is included in this contract and which the Contractor agrees to perform for the prices herein agreed upon.

ARTICLE XI. The City will pay and the Contractor shall receive, in full compensation for constructing and completing the Storm Drain (including all incidental work) and for performing and completing the Works and for all expense in connection therewith or incidental thereto, including the furnishing of all labor, materials, plant, power, tools, supplies and other means of construction and including administration, superintendence and insurance, and for all loss or damage arising out of the nature of the work aforesaid or from the action of the elements or from any unforeseen obstruction or difficulty encountered in the prosecution of the work, and for all risks of any description connected with the work, and for all expenses incurred by or in consequence of the suspension or discontinuance of the work as herein specified, the prices contained in the **Schedule of Unit Prices** following.

## SCHEDULE OF UNIT PRICES

Item 2-A. For earth excavation both above and below mean high water, including the disposal of it, etc., the sum of \_\_\_\_\_ dollars (\$) per cubic yard.

Item 3-A. For rock excavation, including the disposal of it, etc., the sum of \_\_\_\_\_ dollars (\$ ) per cubic yard.

Item 6. For concrete masonry, in place, the sum of \_\_\_\_\_ dollars (\$) per cubic yard.

Item 13. For timber foundations, placed and fastened, the sum of \_\_\_\_\_ dollars (\$) per thousand feet, board measure.

Item 14. For broken stone or gravel, in place, other than that used in concrete, the sum of \_\_\_\_\_ dollars (\$) per cubic yard.

Item 17. For vitrified or cast-iron drain pipe, in place, as follows:

(a) For twelve (12) inch vitrified pipe, the sum of \_\_\_\_\_ dollars (\$) per lineal foot.

(b) For ten (10) inch vitrified pipe, the sum of \_\_\_\_\_ dollars (\$) per lineal foot.

(c) For eight (8) inch vitrified pipe, the sum of \_\_\_\_\_ dollars (\$) per lineal foot.

(d) For six (6) inch vitrified pipe, the sum of \_\_\_\_\_ dollars (\$) per lineal foot.



SCHEDULE OF UNIT PRICES

(j) For fifteen (15) inch vitrified pipe, the sum of  
dollars (\$) )  
per lineal foot.

Item 17-A. For cast-iron pipe and fittings, including specials,  
"extra heavy," in place, as follows:

(c) For six (6) inch, the sum of  
dollars (\$) ) per lineal foot.

(f) For twelve (12) inch, the sum of  
dollars (\$) ) per lineal foot.

Item 21. For steel rods and bars built in concrete, the sum  
of dollars (\$) )  
per ton.

Item 25. For miscellaneous iron castings such as manhole  
heads and covers, gratings, etc., in place, the sum of  
dollars (\$) )  
per ton.

Item 30. For street surface restored, as follows:

(h) For all surfaces of whatever character, as required  
by Section No. 139, the sum of  
dollars (\$) )  
per square yard.

(o) For restoring old curb, as required by Section No.  
139, the sum of  
dollars (\$) )  
per lineal foot.

## QUANTITIES

ARTICLE XII. In case any work or materials shall be required to be done or furnished in or about the Works which it is elsewhere in this contract expressly provided shall be paid for under this Article, or in case any work or materials shall be required to be done or furnished in or about the Works which are not contemplated, mentioned, specified or indicated or otherwise provided for in this contract or in the specifications forming a part of this contract or in or upon the contract drawings and which in the opinion of the Engineer are not susceptible of classification under the Items of the Schedule of Unit Prices, the Contractor shall if ordered by the Engineer do and perform such work and furnish such materials at and for the actual and necessary net cost in money to the Contractor for labor, for insurance upon such labor under the Workmen's Compensation Law and for materials incorporated in the work and in addition thereto ten per centum (10%) of such net cost, and the Contractor shall have no claim in excess of the above, such payment being in full compensation for the performance of such work and the furnishing of such materials and for all expense in connection therewith or incidental thereto, as aforesaid, including the expense of plant, power, tools, supplies and other means of construction, administration, superintendence and insurance, and for all the loss, damage, risks and expenses hereinbefore in Article XI mentioned. The amount of the insurance upon such labor under the Workmen's Compensation Law shall be determined by the amount of the wages actually and necessarily paid for such labor and the rate of insurance for such labor either in the State Insurance Fund or in any stock corporation or mutual association authorized to transact the business of workmen's compensation insurance in New York State, as the case may be. If the Contractor shall not have insured either in such State Insurance Fund or in any such stock corporation or mutual association, the rate allowed will be the rate which he would have been required to pay for such insurance in the State Insurance Fund had he insured



## QUANTITIES

therein. Payment shall not be made under this Article for any such work or materials which are so required to be done or furnished in or about the Works and which are not contemplated, mentioned, specified or indicated or otherwise provided for in this contract or in the specifications forming a part of this contract or in or upon the contract drawings so far as such work or materials may be, in the opinion of the Engineer, susceptible of classification under the Items of the Schedule of Unit Prices, which work or materials shall be paid for in part or in whole, as the case may be, at the unit prices given in the Items of the Schedule.

In case any work or materials shall be required to be done or furnished under the provisions of this Article, for cost plus ten per centum (10%), the Contractor shall at the end of each day furnish to the Engineer daily time slips showing the name and number of each workman employed on such work, the number of hours employed thereon, the character of work he is doing and the wages paid or to be paid to him and also a daily memorandum of such materials furnished, showing the amount and character of such materials, from whom purchased and the amount paid or to be paid therefor. If required by the Engineer or the Commission, the Contractor shall produce any books, vouchers, records and memoranda showing the labor and materials actually paid for and the actual prices therefor. Such daily time slips and memoranda shall not, however, be binding upon the City and if any question or dispute shall arise as to the correct cost of such labor or materials the determination of the Engineer upon such question or dispute shall be final and conclusive.

ARTICLE XIII. The quantities of the various classes of work to be done and materials to be furnished under this contract specified in the Contractor's Proposal are approximate and only for the purpose of comparing on a uniform basis the bids offered for the Works; and neither the City nor the Commission nor any member of the Commission is to be held responsible that any of the said estimated quantities shall be

## DRAWINGS MAY BE CHANGED

found even approximately correct in the construction of the Works; and the Contractor shall make no claim for damages or for anticipated profit or for loss of profit because of a difference between the quantities of the various classes of work actually done or materials actually delivered and the estimated quantities of items stated in the Contractor's Proposal or because of the entire omission of any of the quantities of items stated in the Contractor's Proposal.

ARTICLE XIV. The Commission shall have the right, during the progress of the work, to amplify the drawings, to add explanatory specifications and to furnish additional specifications and drawings.

ARTICLE XV. The Commission further reserves the right to alter, in any way it may deem necessary for the public interests, the drawings aforesaid, in part or altogether, at any time during the progress of the work, without constituting grounds for any claim by the Contractor for payment or allowance for damages or extra service other than is provided for items of the different classes of construction under the Items of the Schedule or in Article XII.

ARTICLE XVI. The Contractor shall complete the entire work to the satisfaction of the Commission and in accordance with the specifications and contract drawings and according to the other provisions of this contract and within the time specified in this contract in the most workmanlike manner and with the highest regard to the safety of life and property and according to the lines, levels and directions given by the Engineer.

ARTICLE XVII. The Contractor shall furnish of the best description all labor and materials, plant, tools, supplies and other means of construction necessary to construct and put in



## INSPECTION

complete working order all work covered by the specifications, contract drawings and provisions of this contract, including all additional specifications, drawings and details issued or required as herein provided.

ARTICLE XVIII. The Contractor hereby represents that prior to the execution of this contract he has examined in detail on the ground the location mentioned herein and indicated on the contract drawings and that he has fully examined the contract drawings and has read each and every clause and section of this contract and of the specifications and has had full opportunity to consider the same and make necessary investigations relating thereto; and he shall not make any claim for, or have any right to, damages or an extension of time for completion of the Works or any other concession because of any misinterpretation or misunderstanding of this contract or of the specifications or of the contract drawings or because of any lack of information.

ARTICLE XIX. No acceptance of any part of the Works or of materials therefor shall relieve the Contractor of his obligation to furnish sound material and perform sound work, whether with respect to such part or to any other part of the Works.

ARTICLE XX. The Commission contemplates, and the Contractor hereby approves, the most thorough and minute inspection by the Commission and its Engineer and by their representatives or subordinates of all work and materials and of the manufacture or preparation of such materials from the beginning of construction to the final completion of the Works. It is the intention of the Commission that its Engineer shall draw the attention of the Contractor to all defects in workmanship or materials or other errors or variations from the requirements of this contract. But no omission on the part of the Commission or its Engineer or any officer, member or

## INSPECTION

subordinate of the Commission to point out such defects, errors or variations shall give the Contractor any right or claim against the City or shall in any way relieve the Contractor from his obligations according to the terms of this contract.

ARTICLE XXI. The Contractor shall at all times give to the Commission and its members, to the Engineer and his assistants and subordinates and to any person designated by the Commission or its Chairman all facilities, whether necessary or convenient, for inspecting the materials to be furnished and the work to be done under this contract. The members of the Commission, the Engineer and all employees of the Commission bearing his authorization or the authorization of the Commission or its Chairman shall be admitted at any time summarily and without delay to any part of the Works or to inspection of materials at any place or stage of their manufacture, preparation, shipment or delivery.

ARTICLE XXII. The Engineer shall be furnished with every reasonable facility for ascertaining whether the work is in accordance with the requirements and intention of this contract, even to the extent of uncovering or taking down portions of finished work. Should the work thus exposed or examined prove satisfactory, the uncovering or taking down and the replacing of the covering or the making good of the parts removed will be paid for at the contract prices for the class of work done; but should the work exposed or examined prove unsatisfactory, such uncovering, taking down, replacing and making good shall be at the expense of the Contractor.

ARTICLE XXIII. The inspection of the work shall not relieve the Contractor of any of his obligations to fulfill this contract as herein prescribed, and defective work shall be made good and unsuitable materials will be rejected notwithstanding that such work and materials have been accepted or estimated for payment. If the work or any part thereof



#### ENGINEER TO DETERMINE

shall be found defective before the final acceptance of the whole work, the Contractor shall at his own expense forthwith make good such defect in a manner satisfactory to the Engineer, and if any material brought upon the ground for use in the work or selected for the same shall be condemned by the Engineer as unsuitable or not in conformity with the specifications, the Contractor shall at his own expense forthwith remove such material.

ARTICLE XXIV. To prevent disputes and litigations, the Engineer shall in all cases determine the classification, amount, quality, acceptability and fitness of the several kinds of work and materials which are to be paid for under this contract, shall determine every question in relation to the Works and the construction thereof and shall determine every question which may arise relative to the fulfillment of this contract on the part of the Contractor. His determination and estimate shall be final and conclusive upon the Contractor, and in case any question touching this contract shall arise between the parties hereto, such determination and estimate shall be a condition precedent to the right of the Contractor to receive any money under this contract.

ARTICLE XXV. The Engineer shall make all necessary explanations as to the meaning and intention of the specifications, shall give all orders and directions contemplated therein or thereby and in every case in which a difficult or unforeseen condition shall arise in the performance of the work required by this contract.

The Contractor shall promptly obey and follow every direction which shall be given by the Engineer, including any direction which the Engineer shall give by way of withdrawal, modification or reversal of any previous direction given by him.

The Queensboro Subway Rapid Transit Railroad is now under construction and the City may enter into a contract for the installation of tracks thereon and it will be necessary during the progress of the work hereunder for other contractors and

## ENGINEER TO DETERMINE

persons to do work in or about the completion or construction of said Railroad (including the station finish work) and the installation of such tracks. It will also be necessary during the progress of the work hereunder for the Interborough Rapid Transit Company, its successors or assigns, and the contractor or contractors of said Interborough Rapid Transit Company, its successors or assigns, to do work in or about the equipment of said Railroad, including but not limited to laying the third or power rail, installing signals, drawing cables and installing wires for station lighting. The Contractor shall so conduct his work as not to impede or interfere with the work of such other contractors or persons engaged in or about the construction or completion of said Railroad or the installation of tracks or the equipment of said Railroad, and shall so arrange and conduct his work that such other contractors and persons may complete their work and said Railroad be put into operation at the earliest possible date.

Wherever any work performed or to be performed by the Contractor under this contract shall adjoin or affect any work performed, being performed or to be performed by any other contractor or contractors of the Commission, the Engineer shall decide any question or dispute between the Contractor and such other contractor or contractors and shall determine which of them shall perform or complete any work and the manner, time and method in which they shall perform their respective work and the facilities which each shall afford to the other or others, and his determination shall as aforesaid be final and conclusive upon the Contractor.

Wherever any work performed or to be performed by the Contractor under this contract shall adjoin or affect any work performed, being performed or to be performed by the Interborough Rapid Transit Company, its successors or assigns, or any contractor or contractors of the Interborough Rapid Transit Company, its successors or assigns, in connection with the equipment of the Queensboro Subway Rapid Transit Railroad, the Engineer shall determine the manner, time and method in which the Contractor shall perform his work and the facilities which he shall afford to the Interborough Rapid Transit Com-



## ENGINEER TO DETERMINE

pany, its successors or assigns, or such other contractor or contractors, and his determination shall as aforesaid be final and conclusive upon the Contractor.

It is understood that the Contractor has made allowance in the prices stipulated in the Schedule of Unit Prices for all expense, loss, risk and damage due to the work of completing the construction of the Queensboro Subway Rapid Transit Railroad and installing tracks thereon and equipping said Railroad.

ARTICLE XXVI. Any engineer substituted by the Commission in place of the Chief Engineer during the absence, illness or disability of the Chief Engineer or when the Commission shall so determine shall, during his official connection, have all the power and authority of the Chief Engineer and in all respects be recognized as such Chief Engineer.

## CHAPTER III

### SPECIFICATIONS

SECTION No. 1. The specifications and the contract drawings hereinafter mentioned, taken in connection with the other provisions of this contract, are intended by the Commission to be full and comprehensive, and to show all the work required to be done. But it is impossible either in advance to show all details or precisely to forecast all exigencies. The specifications and the contract drawings are to be taken, therefore, as indicating the amount of work, its nature and the method of construction so far as the same are now distinctly apprehended. The Storm Drain is to be constructed in connection with the drainage of an intraurban railroad of the highest class, and in the event of any doubt as to the meaning of any portion of the specifications or of the contract drawings or of the text of this contract, the same shall be interpreted as calling for the best construction, both as to materials and workmanship, capable of being supplied or applied. All the clauses of the specifications and all the parts of the contract drawings are, therefore, to be understood, construed and interpreted as intending to produce the results hereinbefore stated.

SECTION No. 2. The Contractor shall construct and complete the Storm Drain strictly in accordance with the requirements of these specifications; if in these specifications or this contract or on the contract drawings any matter or thing requisite be not contemplated, mentioned, specified or indicated or otherwise provided for, nevertheless the same is deemed to be included and the Contractor shall do the same as part of the work hereunder at the unit prices for each class of work where in the opinion of the Engineer applicable or as provided in **Article XII.**

SECTION No. 3. The contract drawings referred to in this contract and these specifications are each countersigned by the Engineer, stamped with the seal of the Commission and bear the general title:



## SPECIFICATIONS

### QUEENSBORO SUBWAY STORM DRAIN

#### CONTRACT DRAWING No.

and are designated or numbered as follows: C-1 to C-12, inclusive, and are dated September 25, 1915.

SECTION No. 4. The sections and dimensions shown on the contract drawings are typical sections and dimensions which should be applicable to the greater part of the work. Working drawings to amplify the contract will be furnished by the Engineer to the Contractor as required, from which all necessary shop drawings shall be made by him. These working drawings will be given to the Contractor, upon his request, at any time after this contract is delivered. Where, however, changes are deemed necessary they may be ordered under Article XV of this contract and the Engineer shall issue such drawings and specifications as may be necessary.

SECTION No. 6. Detail construction drawings of the existing structure may be seen at the office of the Engineer. They are exhibited to the Contractor without any guarantee on the part of the Commission as to their completeness or correctness. The Contractor may have copies (blue-prints) of these detail construction drawings for such aid, if any, as may be derived from them, on the payment of the cost of blue-printing.

SECTION No. 7. If in the prosecution of the work difficulties of any nature be encountered which are not indicated or suggested by the specifications or drawings, including said detail construction drawings, or if additional surface, subsurface or overhead structures or obstructions be discovered, or if any surface, subsurface or overhead structures or obstructions be found of different size or in different positions or of different nature from those shown on the drawings, including said detail construction drawings, or if in any other way such specifications or

## SPECIFICATIONS

drawings, including said detail construction drawings, be found erroneous, incomplete or misleading, the Contractor shall take every necessary or proper precaution to overcome the unforeseen difficulty and shall support, maintain, protect, remove, relay, adjust or readjust, as the case may be, the additional or different surface, subsurface or overhead structures according to the direction of the Engineer and as provided in this contract and these specifications.

SECTION No. 8. The specifications do not include all requirements, but are requirements in addition to those elsewhere given or provided in this contract. The specifications and the other provisions of this contract and the contract drawings are intended to be explanatory of one another. Should, however, any discrepancy appear or any misunderstanding arise as to the import of anything contained in either, the explanation or decision of the Engineer shall be final and conclusive.

SECTION No. 9. These specifications are grouped in subdivisions as follows:

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## SUBDIVISION 1

### BRIEF DESCRIPTION OF THE WORK

SECTION No. 10. The Storm Drain is to consist of a main drain, necessary connections, manholes, outlets and other details required to remove the storm water from the existing structure. The general details of construction, location, etc., are indicated more particularly on the contract drawings.

SECTION No. 11. In addition to the construction of the Storm Drain it will be necessary to do various incidental work which is generally referred to in Article X hereof.

## SUBDIVISION 2

### GENERAL CLAUSES

SECTION No. 14. All materials and workmanship must be of the best class in every respect, and the Engineer shall be the sole judge of their quality and efficiency.

SECTION No. 15. All the work shall be prosecuted in the manner, according to local conditions, best calculated to promote rapidity in construction, to secure safety to life and property and to reduce to the minimum any interference with abutting property and the public travel. Decking of the streets, paving, or other surface work affecting, or affected by, street traffic shall be prosecuted during such hours as will reduce such interference to a minimum. Night work shall be conducted, in accordance with the directions of the Engineer, so that annoyance to occupants of abutting property shall be reduced to a minimum, and the Engineer may, if in his judgment conditions so require, direct that night work be omitted.

SECTION No. 16. The Storm Drain is a part of the drainage system of a rapid transit railroad and the interests of the City imperatively require that it shall be completed and put into operation without delay. If the Contractor shall not prosecute his work in such manner as to make it probable in the judgment of the Engineer that the work will be completed within the time limited, the Contractor, if directed by the Commission, shall increase the number of shifts and the number of men in each shift to such extent as may be necessary to insure the completion of the work within the times required by this contract or within the shortest possible time thereafter.

SECTION No. 17. In case of emergencies involving danger to life or property, continuous work with an increased force may be ordered by the Engineer for such time as may be necessary.

SECTION No. 18. No work shall be begun until the Commission shall issue to the Contractor a permit authorizing him



to proceed. No permits for excavation will be issued until the Contractor has given satisfactory assurance to the Engineer that the material needed for construction will be available. The Contractor must conduct his work so as to avoid advancing the excavation at any place ahead of the delivery on the work of the materials of construction required for such place, unless otherwise permitted by the Engineer. If the Contractor elects, and is permitted, to advance the excavation ahead of the delivery of such materials of construction, it will become necessary for him to support and maintain the trenches until the materials of construction can be obtained; this he shall do entirely at his own risk and expense. The permits shall be in such form and shall cover such portions of the work as the Commission shall prescribe.

SECTION No. 19. Before any opening is made in the surface of a street, a copy of the permit issued by the Commission shall have been filed with the Borough President not less than five (5) days, unless the Engineer shall expressly direct work to begin within a less period.

SECTION No. 20. At least one (1) week before commencing work on any part of the Storm Drain, the Contractor shall give notice in writing to the Engineer of his intention to commence such operations; and at least one (1) week before commencing or resuming manufacture of any article called for by these specifications the Contractor shall give notice in writing to the Engineer of his intention to commence or resume such manufacture, with the name and address of the maker and the amount and description of the material to be manufactured.

SECTION No. 22. In all operations connected with the Works, all ordinances of the City and of the Board of Health and all laws of New York State which are applicable to and control or limit in any way the actions of those engaged in the work or affecting the materials belonging to or used by them shall be respected and strictly complied

## SPECIFICATIONS—GENERAL CLAUSES

with, and the Contractor shall further strictly comply with all applicable Federal, State and Municipal regulations regarding the transportation of materials in and around the City and Harbor of New York.

SECTION No. 23. Whenever the construction of the Works under the provisions of this contract shall interfere with, disturb or endanger any sewer, water pipe, gas pipe, or other duly authorized subsurface structure, the work of construction at such points shall be conducted in accordance with the reasonable requirements of the Borough President or the Commissioner of Water Supply, Gas and Electricity or other officer or local authority having the care of and the jurisdiction or control over such subsurface structures so interfered with, disturbed or endangered.

SECTION No. 24. The Contractor shall at his own cost provide for the water supply necessary for his work and he shall bear the cost of any inspection charge in connection therewith. He shall bear the cost of all work, labor and material in connection with the bagging, cutting and capping, installing circulation connections and temporary drips for gas pipes where, in the opinion of the Engineer, it is necessary to cut off the supply of gas, and also in connection with replacing and restoring such pipes to their original condition. He shall also bear the cost of the shutting off and restoration of the flow in water mains where such work applies to the maintenance and support thereof as provided in Section No. 55.

SECTION No. 25. On streets adjacent to the work, only such material may be stored as may be necessary in case of an emergency, to sheet or to support the excavation; or a reasonable amount of such material as may be absolutely necessary to avoid delay in construction may be stored; such material must not be allowed to accumulate, but must be replenished from day to day. The amount to be so allowed shall be determined by the Engineer.



## SPECIFICATIONS—GENERAL CLAUSES

SECTION No. 27. In any case material may be stored only with the approval of the Engineer, revocable at any time; and if so ordered, such material shall be removed immediately by the Contractor at his own expense on receipt of the order, or within a period of time to be therein stated.

SECTION No. 28. Wherever the work is being carried on free access must be given to every fire hydrant and fire alarm box, and when required, hydrants shall be extended by suitable tube or piping to an accessible point as approved by the Engineer and to the satisfaction of the Chief of the Fire Department. Materials must not be piled at any time or place within ten (10) feet of any fire hydrant or fire alarm box; and where materials are unavoidably piled or placed in the vicinity of a fire hydrant or fire alarm box and to such height as to prevent the same from being readily seen, the position of such hydrant or fire alarm box shall be indicated by suitable signals, both day and night.

The Contractor shall at his own expense guard, maintain and protect the wires, cables, ducts, manholes, posts and poles of the Fire Department. He shall not cause the interruption of the Fire Department Fire Alarm Telegraph service. No Fire Department wire, cable, duct, manhole, post or pole shall be disturbed except in the presence of a representative of the Bureau of Fire Alarm Telegraph. In case any such wire, cable, duct, manhole, post or pole shall be disturbed, it shall be restored to its original condition by the Contractor at his own expense.

SECTION No. 29. The Contractor shall at his own expense keep the work, streets and all public places occupied by him clear of all refuse and rubbish that may accumulate from any source whatever and leave them in a neat condition; but this is in no way to be construed as placing upon the Contractor the usual duties of the Street Cleaning Department.

SECTION No. 30. Where access to any adjacent property is temporarily cut off, owing to the occupancy of the street by

the Contractor, he must, at his own cost, render every assistance to the owner or occupant in handling such materials of any description, including all material to be removed by the Department of Street Cleaning, as may have to be taken to or removed from such property; such material shall be taken to or from the nearest accessible point that in the opinion of the Engineer is convenient for handling.

SECTION No. 31. Waste material of any character will under no conditions be permitted to remain on the streets, but must immediately on its becoming unfit for use in the work be carted away and disposed of by the Contractor at his own expense as hereinbefore provided; nor shall such materials be allowed to accumulate in the trenches.

SECTION No. 32. Necessary conveniences, properly secluded from public observation, shall be constructed and maintained by the Contractor at his own expense wherever needed for the use of his employees, to the satisfaction of the Engineer and the sanitary authorities.

SECTION No. 33. Wherever necessary the Contractor shall erect and maintain at his own expense fences for the protection of adjoining property and of the adjoining public places.

SECTION No. 34. The using of fences and buildings during construction for advertising purposes, other than the name and address of the Contractor, is forbidden; all temporary buildings and fences erected by the Contractor shall be neat in appearance and shall be painted as directed by the Engineer.

SECTION No. 35. Barricades and bridges shall be erected by the Contractor at his own cost, for the protection of the work or use of the public; they shall be substantial in character and neat in appearance.

SECTION No. 36. The Engineer will prepare and furnish to the Contractor, from time to time as aforesaid, drawings



amplifying such details of the contract drawings as may be necessary and drawings necessary to show the adjustment and reconstruction of all surface and subsurface structures wherever the reconstruction of the same is necessitated by the construction of the Storm Drain. These drawings must be strictly followed, unless local conditions should develop during construction, suggesting changes, when, with the approval of the Engineer, such changes may be permitted.

SECTION No. 37. The Contractor shall make all working or shop drawings which may be required in addition to the contract drawings or in addition to such other drawings as the Engineer may issue in amplification of such contract drawings, as explained above. All working or shop drawings shall be submitted in duplicate to the Engineer for his approval, which approval, if given, shall be indicated by his countersigning one set of such working or shop drawings and returning the same to the Contractor. Should the working or shop drawings be not approved by the Engineer, then the Engineer shall return one set of such working or shop drawings, with the necessary corrections and changes indicated thereon; and the Contractor must make such corrections and changes, and again submit drawings in duplicate for the approval of the Engineer; and no work called for by said working or shop drawings shall be done until the approval of the Engineer is obtained, which must be given or refused within five (5) working days after delivery to him at his office of such drawings in duplicate. Immediately upon final approval of such working or shop drawings by the Engineer, the Contractor shall furnish the Commission with five (5) additional copies of such approved drawings. The tracings of all approved working or shop drawings made by the Contractor shall be delivered to the Engineer prior to or upon the completion of the Works.

SECTION No. 38. During the progress of the work the Commission will give, through the Engineer to the Contractor, suitable points, marks or benches, indicating the line and grade of the Storm Drain, such points or bench marks to be established

## SPECIFICATIONS—GENERAL CLAUSES

at such intervals as the Engineer deems necessary to enable the Contractor to perform his work. The principal lines and grades will be given by the Engineer, who may change them from time to time as may be authorized and directed by the Commission. The stakes and marks given by the Engineer shall be carefully preserved by the Contractor, who shall give to the Engineer all necessary assistance and facilities for establishing benches and plugs and for making measurements.

SECTION No. 39. Orders and directions may be given orally by the Engineer to, and shall be received and promptly obeyed by, the Contractor or his representative or any superintendent, overseer or foreman of the Contractor who may have charge of the particular work in relation to which the orders or directions are given, and a confirmation in writing of such orders or directions will be given to the Contractor by the Engineer if so requested. The Contractor or his duly authorized representative shall be present at all times on the work to receive orders and directions from the Engineer.

SECTION No. 40. Any imperfect construction which may be discovered before the final acceptance of the work shall be corrected immediately on the requirement of the Engineer and at the Contractor's expense, notwithstanding that it may have been overlooked by the Inspector.

SECTION No. 41. All work of whatever kind which during its progress and before its final acceptance shall become damaged from any cause shall be broken up or removed and shall be replaced by good and sound work at the Contractor's expense.

SECTION No. 42. If any material brought on the ground for use in the work or selected for the same shall be condemned by the Engineer as unsuitable or not in conformity with the specifications, the Contractor shall forthwith remove such material at his own expense.



SPECIFICATIONS—GENERAL CLAUSES

SECTION No. 43. The Contractor shall employ only competent, skillful and faithful men to do the work. Whenever the Engineer shall notify the Contractor in writing that in his opinion any man on the work is incompetent, unfaithful or disorderly, such man shall be discharged from the work and shall not again be employed on it.

### SUBDIVISION 3

#### GENERAL MANNER OF PROSECUTION AND MAINTENANCE OF TRAFFIC

SECTION No. 44. Where streets are open, suitable bridges shall be built and maintained, at the Contractor's expense, to permit owners and occupants to reach their premises. Where necessary, proper and easy means for passengers to reach and leave street cars shall be maintained.

SECTION No. 46. Generally, the Contractor will be permitted to conduct his work in the most expeditious manner possible, having due regard for the safety of persons and property and facilities for traffic and under such instructions as the Engineer may give from time to time.

SECTION No. 47. All necessary facilities shall be furnished by the Contractor at his own expense for the benefit of street traffic, both on longitudinal and cross streets.

SECTION No. 48. In order to minimize interference with traffic and inconvenience to abutting property owners during the construction of the Storm Drain every precaution must be taken to keep traffic free from interruption.

SECTION No. 49. In general, work will as provided herein be carried on in open trench without decking, but at street intersections and at other places where special conditions so require and the Engineer may direct, decking shall be placed and maintained. Where the decking is temporarily removed from any part of the street the opening shall be protected by suitable fencing and bridging.

In all cases the Contractor shall at all times at his own expense keep all the street crossings on the lines of the sidewalks in a clean and neat condition, bridging gutters and low places where water might collect.



SPECIFICATIONS—GENERAL MANNER OF PROSECUTION AND  
MAINTENANCE OF TRAFFIC

SECTION No. 50. In exceptional cases, where rock is within a few feet of the street or sidewalk surface, it may be impracticable to operate drills under such decking until a sufficient depth of excavation has been obtained. In such cases such latitude will be allowed the Contractor as may prove absolutely necessary for the execution of this contract, and as the Engineer may deem advisable.

#### SUBDIVISION 4

##### STREET RAILROAD TRACKS, MAINS AND OTHER SURFACE, SUB-SURFACE AND OVERHEAD STRUCTURES

SECTION No. 51. Notice shall be given by the Contractor to all individuals, companies and the proper City officials, owning or having charge of surface, subsurface or overhead structures along any part of the work, of his intention to commence operations along such part of the route, at least one (1) week in advance, and the Contractor shall file with the Engineer at the same time a copy of said notice; and he shall co-operate with the proper parties, officers or officials in charge of such structures and shall furnish them with all reasonable facilities to inspect the methods of caring for their property.

SECTION No. 52. In the rearrangement of surface, subsurface or overhead structures requiring removal and relaying or reconstruction due to interference with the Storm Drain a tentative plan will be made by the Engineer, which will be submitted to the parties interested; if any reasonable changes are then requested by any of the said parties within ten (10) days after the submission of the tentative plan, such changes will then be made, if in the judgment of the Engineer they will best conserve the interest of all parties concerned; a further plan will then be made which, on the approval of the Engineer, will be final.

SECTION No. 53. Whenever it becomes necessary to cut, move, change, or reconstruct any surface, subsurface or overhead structures, or connections therewith, such work shall be done according to the reasonable satisfaction of the owners of such structures.

SECTION No. 54. All work of reconstruction or alteration shall be done with reasonable dispatch, and facilities shall be provided so that said work will interfere as little as possible with the practical working and use of such structures.



SPECIFICATIONS—SURFACE, SUBSURFACE AND OVERHEAD  
STRUCTURES

SECTION No. 55. The Contractor shall at all times, by suitable bridging or other supports, maintain and support in an entirely safe condition for the usual service and to the reasonable satisfaction of the owners, all surface, subsurface and overhead structures and all their appurtenances encountered or affected during the prosecution of his work; if the maintenance of such usual service makes it necessary, the Contractor shall temporarily remove and relay or reconstruct any such surface, subsurface or overhead structure and shall restore the same prior to the completion of this contract. All surface, subsurface and overhead structures and all their appurtenances and all surfaces of whatever character along the line of the work shall be protected from injury, and the Contractor shall fully restore such surface, subsurface and overhead structures and all their appurtenances and all such surfaces to, and shall leave them in, as useful, safe, durable and good a condition as existed before construction was begun. All the above, including also all changes of surface, subsurface and overhead structures and their appurtenances made by the Contractor for his own convenience in executing his work, shall be done at the Contractor's own expense and shall be deemed to be included in the prices stipulated in the **Schedule** for excavation except as otherwise herein specifically provided.

SECTION No. 56. All work in connection with rebuilding sewers or their appurtenances which may be required to be rebuilt because of physical interference with the Storm Drain shall conform to the standard requirements of the Bureau of Sewers, Borough of Queens. Such work, also all work in connection with changes in surface, subsurface and overhead structures, made necessary because of the physical interference of such structures with the Storm Drain, will be paid for at the prices stipulated for the various classes of work or material applicable thereto in the **Schedule of Unit Prices** or if, in the opinion of the Engineer, not susceptible of such classification, then as provided in **Article XII**.

SPECIFICATIONS—SURFACE, SUBSURFACE AND OVERHEAD  
STRUCTURES

SECTION No. 59. The Contractor shall maintain and support, both temporarily and permanently, in a safe condition for continuous operation all surface and elevated railroads along the line of or crossing the line of the work, including ducts, cables, poles and all other appurtenances of such railroads.

Payment for the support and maintenance of surface and elevated railroads shall be deemed to be included in the prices stipulated for excavation.

SECTION No. 60. In the event of the owners or the City desiring to make any addition, alteration or extension to their structures or to do any work to or in connection with surface, subsurface or overhead structures owned by them or it or to lay any new structure in or across a street occupied by the Works, at the time the work under this contract is in progress, the Contractor, by written permission, shall give said owners or the City all reasonable opportunity to perform such work; provided such work or alteration for the benefit solely of the owners of subsurface structures does not cause the Contractor any serious loss or delay, as shall be determined by the Commission. The written permission from the Contractor, with three (3) prints of drawings or sketches or a description indicating the proposed work in detail, shall be submitted to and approved by the Engineer before any work shall be proceeded with under such written permission.



## SUBDIVISION 5

### EXCAVATION

SECTION No. 61. Special care must be taken to avoid damage wherever excavation is being done. The width of such excavation shall not exceed the width actually necessary, in the opinion of the Engineer, for the proper prosecution of the work. All excavations shall be of such width, in addition to that of the Storm Drain, as shall be necessary, in the opinion of the Engineer, for the proper and expeditious progress of the work and to permit the laying and readjusting of all sewers, mains, subways and other subsurface structures encountered along the route and contiguous to the Storm Drain.

SECTION No. 62. Excavation shall be carried to such depth, both in soft ground and in rock, as may be necessary to permit the laying of such concrete bed, special foundation or drain pipes as may be deemed necessary by the Engineer.

SECTION No. 63. The sides of the excavations shall be secured against slips by suitable sheet piling or sheeting, held in place by braces, shores or waling timbers, special precautions being taken where there is additional pressure due to the presence of street railroad tracks or other structures.

SECTION No. 64. Sheeting shall be driven wherever possible, but when it is placed against the sides of the excavation, the spaces or voids back of the sheeting must be immediately and carefully filled with suitable material to prevent as far as possible the natural ground back of the sheeting from moving.

SECTION No. 65. No payment will be made for sheeting left in the ground or in the work, unless the Engineer shall in writing require it to be left in, in which case payment will be made for the sheeting so left in as measured by the Engineer, at one-half the current market price for new material of the same

## SPECIFICATIONS—EXCAVATION

grade, character and dimensions, and without any allowance or payment for placing the same.

SECTION No. 66. All timber used for sheeting, shoring, bracing, decking or other temporary purposes shall be sound and free from any defects that may impair its strength. It shall be provided, placed and removed at the Contractor's own cost and expense. The top or wearing surface of all decking used for carriageways shall be of hard, yellow pine (unless otherwise permitted), sound, straight and free from all shakes and large, loose knots. All sheeting and timber used temporarily shall be put in place by skilled mechanics, keyed tight by wedges where necessary and so arranged as to be withdrawn readily without endangering the adjoining soil.

SECTION No. 67. The removal, where necessary, of all walls and other parts of vaults of abutting property along the route of the Storm Drain that are within the ordered net lines of excavation shall be considered as earth excavation as provided in Section No. 79, but the restoration of all such walls and other parts of vaults originally within the ordered net lines of excavation, when, in the opinion of the Engineer, susceptible of classification, will be paid for at the unit prices stipulated in the **Schedule** applicable, in the opinion of the Engineer, to the several classes of work and material involved in such restoration; or when, in the opinion of the Engineer, not susceptible of classification such work will be paid for under **Article XII**.

The above is not to be construed, however, as applicable to any work beyond the ordered net lines of excavation, which shall be done at the Contractor's own cost and expense.

SECTION No. 69. Ledge rock in place, concrete of the existing structure and boulders whose volume within the ordered net lines of excavation is half a cubic yard or more each will be considered as rock excavation.

SECTION No. 70. Whenever rock is encountered in the trench, it shall be stripped of earth in sections not less than twenty



## SPECIFICATIONS—EXCAVATION

(20) feet in length and the Engineer shall be duly notified in order that he may measure or cross-section the same.

SECTION No. 71. Whenever rock or material requiring blasting is encountered, all necessary precautions must be exercised by the Contractor, as required by the ordinances of the City relative to blasting. Explosives shall be used only of such character and strength as may be permitted by the Commission, and the right is reserved for the Engineer to direct that in special cases ordinary blasting powder only, in small charges, shall be used. Blasting shall not be done between the hours of 11 P. M. and 7 A. M. without the express permission of the Engineer and then only under such restrictions as he may impose.

SECTION No. 72. The Contractor shall provide at his own expense such magazines and magazine houses for the storage of explosives in such localities and in such manner as may be approved by the proper authorities in charge of such matters. No larger quantity of explosives shall be kept on the line of the work than will be actually required for the twelve (12) hours of work next ensuing, and it shall be kept under lock, the key to which shall be in the hands of only the foreman or other equally trustworthy person. The amount of explosives kept in any one place shall not exceed the limit permitted by any ordinance of the City or as may be determined by the Commission. Caps and exploders shall not be kept in the same place with dynamite and other explosives. During freezing weather special precautions shall be taken as to the care and manipulation of dynamite.

SECTION No. 73. Whenever any subsurface structure is encountered in or alongside of the trench, right is reserved to direct that all rock within five (5) feet of the same shall be removed by means other than blasting.

SECTION No. 74. Any excess excavation in the bottom of the trench, whether in earth or in rock, below the net line of

## SPECIFICATIONS—EXCAVATION

excavation, shall be replaced by a compacted backfill of the character specified in Section No. 84, placed at the Contractor's own expense.

SECTION No. 75. Whenever water is encountered in trenches, it shall be removed by bailing or pumping, great care being taken when pumping that the surrounding particles of soil be not disturbed or removed. The discharge from all pumps shall be conducted into the adjacent sewers, and the discharge pipes shall be so arranged as to be readily inspected at all times to ascertain if the water is free from particles of soil.

SECTION No. 76. All carts, buckets and other vehicles used by the Contractor for the removal of material, shall be tight and so arranged and so loaded as not to spill. Whenever a cart, bucket or other vehicle so used is leaky or unsuitable, it shall be immediately withdrawn from the work on notification by the Engineer.

SECTION No. 77. Excavated material not required for back-filling shall be removed expeditiously and disposed of, in any place selected by the Contractor, subject to the ordinances and regulations of the City authorities governing the disposal of such material and the regulations of the United States Government as to the disposal or dumping of material in and about or near the Harbor of New York.

SECTION No. 78. All curb, gutter, flagging, paving and macadam stones, necessary to be removed, which in the judgment of the Engineer are suitable to be used again, shall be stored in such places as the Engineer shall direct, or shall be removed as provided in these specifications; in all cases a passageway on the sidewalks and in the roadway shall be preserved free from obstructions.

SECTION No. 79. Earth excavation includes the excavation of all materials of whatever nature encountered in the trenches, excepting ledge rock in place, concrete of the existing structure



## SPECIFICATIONS—EXCAVATION

and boulders whose volume within the ordered net lines of excavation is half a cubic yard or more each.

SECTION No. 80. No deduction from the volume of excavation determined by the ordered net lines of excavation will be made on account of vault space or spaces occupied by pipes and other subsurface structures. Under no circumstances will a double allowance be made for any excavation.

SECTION No. 81. There will be no measurement or allowance made nor money paid for excavation outside (below or wider than) the net measurement lines as provided in Section No. 82, except as provided in this Section No. 81 for test pits; and no allowance will be made for any excess excavation caused by slips or slides. It is understood and agreed that for all such matters the Contractor has estimated and allowed in the unit prices of the **Schedule**.

If ordered by the Engineer, the Contractor shall dig test pits in advance of the excavation of the Storm Drain, to determine the location of subsurface structures. Payment for excavation and street surface restored in connection with these test pits will be made at the prices stipulated in **Schedule Items 2-A and 30**, measurement for payment being made to the lines of excavation ordered by the Engineer.

SECTION No. 82. The ordered net lines of excavation and the measurements for payment for excavation will be determined as follows:

(1) In the estimate and payment for earth and rock excavation for pipe laying, both for the Storm Drain and for subsurface structures required to be removed, relaid or reconstructed in other than their original locations or otherwise changed because of their physical interference with the Storm Drain, allowance will be made in earth and in rock for a width of trench two (2) feet wider than the interior diameter of the pipe and a depth six (6) inches deeper than the invert of the pipe, measured from the surface of the street on the line of the trench.

## SPECIFICATIONS—EXCAVATION

In no case, however, shall the trench be less than three (3) feet in width.

(2) In the building of Storm Drain manholes and of valve chambers and for the setting of valves, valve boxes and hydrants, the total excavation to be allowed will be the volume within the smallest rectangular prism having vertical sides that will enclose the net outside lines of such manholes, valve chambers, valves, valve boxes or hydrants and be not more than six (6) inches horizontally distant therefrom, the depth being taken as the distance from the street surface to the lowest part of the structure or appurtenance.

(3) In the estimate and payment for excavation for conduit and duct laying and for the building of duct manholes, vaults, service boxes and their appurtenances, for conduits and ducts required to be removed, relaid or reconstructed in other than their original locations or otherwise changed because of their physical interference with the Storm Drain, allowance will be made in earth and in rock for a width of trench eight (8) inches wider than the duct bank or other structure, the depth measured on the line of the trench being taken as the distance from the street surface to the lowest part of the structure; provided, however, that if such conduits or ducts shall consist of a single conduit or a group of conduits not encased in concrete, then the ordered net lines of excavation and the measurements for excavation shall include the total excavation from the street surface to the extreme bottom of such single conduit or group of conduits within vertical planes one (1) foot outside the net outside lines of such single conduit or group of conduits.

(4) For all other subsurface structures the ordered net lines of excavation shall be as directed by the Engineer.

(5) At the intersection of two trenches or at the intersection of a pipe or other trench with an excavation made by the Contractor under orders from the Engineer for any purpose whatsoever, the cubical contents of the intersection will be allowed only once. Under no circumstances will a double allowance be made for any excavation.

Excavation for the Storm Drain and for all subsurface structures required to be removed, relaid or reconstructed in other



## SPECIFICATIONS—EXCAVATIONS

than their original locations or otherwise changed because of their physical interference with the Storm Drain will be paid for at the prices stipulated in **Schedule Item 2-A** for excavation in earth and **Schedule Item 3-A** for excavation in rock.

SECTION No. 83. The prices stipulated for excavation in **Schedule Items 2-A and 3-A** shall include the cost of the disposal of the materials excavated, of backfilling, of all decking and bridging, of all sheeting and bracing, and of maintaining and supporting of trenches during and after excavation, of all pumping and bailing, and of the maintenance and support, with all incidental work, labor and material of any kind, of all surface, subsurface and overhead structures and surfaces of whatever nature and their appurtenances.

## SUBDIVISION 6

### BACKFILLING

SECTION No. 84. The trenches at the sides of and over the top of the Storm Drain and wherever backfilling is necessary shall be backfilled with sand, gravel or other good, clean earth, free from perishable material and from stones exceeding six (6) inches in diameter, and not containing in any place a proportion of stone of or below that size exceeding one (1) part of stone to five (5) parts of earth. The filling shall be compacted by flooding with water or by ramming in layers not exceeding six (6) inches in depth as required by the Engineer.

SECTION No. 85. Whenever pipes, sewers or other subsurface structures are met, the filling must be carefully packed, rammed and tamped under and about such subsurface structures, special tools being used for the purpose. No filling of trenches with frozen earth will in any case be permitted nor will any filling be permitted over frozen material.

As fast as the work of filling permits, sheeting and other timber supporting the sides of the excavation shall be carefully withdrawn, and the spaces left by the removal of such material carefully backfilled, but if directed by the Engineer, the sheeting shall be left in place.

SECTION No. 86. The cost of backfilling is deemed to be included in the prices stipulated for earth and rock excavation, in **Schedule Items 2-A and 3-A.**



## SUBDIVISION 7

### TIMBER FOUNDATIONS

SECTION NO. 87. Timber grillage foundations shall be built if so directed by the Engineer.

All foundation timber shall be of pine, spruce, or other timber permitted by the Engineer, sound and free from shakes. It shall be of such dimensions and laid in such manner as the special drawings to be issued shall require, and shall be held in place by bolts, spikes or good, seasoned oak or locust treenails.

No wastage will be allowed for, and the estimate of the quantities of foundation timber used will be based on the amount ordered by the Engineer and placed according to his directions. Payment for foundation timber will be made at the price stipulated in **Schedule Item 13.**

## SUBDIVISION 8

### CEMENT

SECTION No. 88. All cement used in the work shall be true Portland cement, by which is meant the finely pulverized product resulting from the calcination to incipient fusion of a properly proportioned intimate mixture of argillaceous and calcareous earths or rocks to which no addition greater than three per centum (3%) has been made subsequent to calcination.

SECTION No. 89. Before any cement is furnished, the brand shall receive the approval of the Engineer. Cement, to be acceptable, shall be of a well-known brand which has been in successful use for large engineering works in America for at least five (5) years, and which has an established reputation for uniform character. Preference will be given to cements which, by their records, show a tendency to maintain high strength of mortar with increased age.

SECTION No. 90. Cement shall be subject to inspection at the place of manufacture or on the work, and to such tests as may be ordered by the Engineer. The Engineer or his representative shall have access at all times and places to inspect the methods of manufacture, storage and protection, and shall have liberty to inspect the daily laboratory records of tests and analyses at the cement works.

SECTION No. 91. In general, tests will conform to the methods recommended by the Committee on Uniform Tests of Cement of the American Society of Civil Engineers. Unless otherwise directed, samples will be taken at the place of manufacture by a representative of the Engineer, and sent to the Commission's laboratory, where the tests will be made. If required, tests will be made on the individual samples, without intermixing.

SECTION No. 92. The cement shall have a specific gravity of not less than 3.10 nor more than 3.25 after being thoroughly dried at a temperature of 212 degrees Fahr. The color shall be uniform, bluish gray, free from yellow or brown particles.



## SPECIFICATIONS—CEMENT

SECTION No. 93. Chemical analyses of cement made from time to time shall show a reasonably uniform composition. Cement shall contain not more than one and three-fourths per centum ( $1\frac{3}{4}\%$ ) of sulphuric anhydride ( $\text{SO}_3$ ) nor more than four per centum (4%) of magnesia ( $\text{MgO}$ ).

SECTION No. 94. The fineness of the cement shall be such that it shall leave by weight a residue of not more than eight per centum (8%) on a 100-mesh sieve and not more than twenty-five per centum (25%) on a 200-mesh sieve; the wires of the sieves being respectively 0.0045 and 0.0024 inch in diameter.

SECTION No. 95. It shall develop initial set in not less than thirty (30) minutes unless a more quickly-setting cement is specifically required, and shall develop hard set in not less than one (1) hour nor more than ten (10) hours.

SECTION No. 96. Pats of neat cement, after remaining one (1) day in moist air, shall be kept in air or water of normal temperature for at least twenty-eight (28) days, or shall be exposed to an atmosphere of steam, above boiling water, in a loosely closed vessel for at least five (5) hours; and the separate parts under any of these conditions shall remain hard without any indications of checking, cracking, distortion, disintegration or blotching.

SECTION No. 97. Neat cement briquettes shall have at the end of one (1) day in moist air a breaking strength, per square inch of sectional area, of not less than one hundred and fifty (150) lbs.; at the end of seven (7) days—one (1) day in air, six (6) days in water—of not less than five hundred (500) lbs.; at the end of twenty-eight (28) days—one (1) day in air, twenty-seven (27) days in water—of not less than six hundred (600) lbs. The strength at twenty-eight (28) days shall be not less than that at seven (7) days.

Mortar briquettes, composed of one (1) part of cement and three (3) parts of standard Ottawa sand, by weight, shall have at the end of seven (7) days—one (1) day in air, six (6) days

## SPECIFICATIONS—CEMENT

in water—a breaking strength, per square inch of sectional area, of not less than two hundred (200) lbs.; and at the end of twenty-eight (28) days—one (1) day in air, twenty-seven (27) days in water—of not less than three hundred (300) lbs. The strength at twenty-eight (28) days shall show an increase of not less than fifty (50) lbs. over the strength at seven (7) days.

SECTION No. 98. Tests will be made from time to time extending over longer periods than twenty-eight (28) days. If such tests show a tendency to unsoundness or unusual reduction in strength with increased age, the Engineer shall have the right to prohibit the further use of that brand and to require that another brand be substituted.

SECTION No. 99. All cement shall be held in storage to allow ample time for tests to be made before the cement is required for use in the work.

SECTION No. 100. Cement shall be packed and delivered in canvas sacks or other strong, well-made packages, plainly marked with the manufacturer's brand, and sealed in an approved manner. The weights of such packages shall be uniform.

SECTION No. 101. The Contractor shall at all times keep in store on the work, or at some point convenient thereto, an abundant supply of cement, so as to guard against possible shortage. It shall be stored in a weather-tight building, with a tight floor a proper distance above the ground. Cement that has become partially set or otherwise damaged shall not be used.



## SUBDIVISION 9

### MORTAR

SECTION No. 102. All mortar shall be prepared from cement and sand approved by the Engineer. These ingredients shall be thoroughly mixed dry in the proportions specified below; sufficient water shall then be added to produce a stiff paste. Water used in mortar, grout or concrete must be clean, fresh water. Salt water will not be permitted. The mortar shall be freshly mixed for the work in hand, in proper boxes made for that purpose, and no mortar shall be used that has stood beyond such limit of time as may be determined by the Engineer.

Sand used for mortar shall be clean, and shall be graded from fine to coarse to the satisfaction of the Engineer. It shall contain no grains which will not pass a one-fourth ( $\frac{1}{4}$ ) inch mesh sieve, nor more than six per centum (6%) by weight which will pass a 100-mesh sieve.

Sand shall be of such quality that mortar composed of one (1) part of Portland cement and three (3) parts of sand by weight will have a tensile and compressive strength equal to mortar of the same consistency made from one (1) part of the same kind of cement and three (3) parts of standard Ottawa sand.

SECTION No. 103. For purposes of mixture, three hundred and seventy-five (375) pounds of Portland cement shall be estimated at three and one-half ( $3\frac{1}{2}$ ) cubic feet of volume. The proportions for brick and stone masonry shall be one (1) part cement to two (2) parts sand; for pointing, one (1) part cement to one (1) part sand; for concrete masonry, as specified under the head of concrete; and for other classes of work, as directed by the Engineer.

## SUBDIVISION 10

### CONCRETE

SECTION No. 106. The concrete shall be composed of gravel or broken stone, or a mixture of both, free from all dust and dirt, mixed with the proportion of mortar specified below. The water used in mixing concrete shall be clean, fresh water. Salt water will not be permitted.

SECTION No. 107. Sand for concrete shall be of the kind specified for mortar in Subdivision 9.

SECTION No. 108. Stone for concrete shall be sound, clean gravel, or sound, hard, broken limestone or trap rock, or a mixture of such gravel and broken stone. If a mixture of gravel and broken stone is used the Engineer may require that the gravel and broken stone be stored separately on the work and mixed in single batches as needed.

SECTION No. 109. The gravel or broken stone or the mixture of gravel and broken stone shall be graded from fine to coarse, and that which is all of one size, or practically so, shall not be used. It shall be screened or washed so as to remove all dust, and it shall contain no pieces that will pass through a hole three-eighths ( $\frac{3}{8}$ ) of an inch in diameter, and no pieces that will not pass through a hole one and three-fourths ( $1\frac{3}{4}$ ) inches in diameter. Broken stone or gravel for concrete, graded as above, but between three-eighths ( $\frac{3}{8}$ ) and three-fourths ( $\frac{3}{4}$ ) of an inch in diameter, may be required for use in special parts of the work.

SECTION No. 110. The proportion of sand and stone (or gravel) used in making concrete shall be by volume as cast into the measuring box. Concrete shall be in the proportion of one (1) part of cement, two (2) parts of sand and four (4) parts of stone.

SECTION No. 111. Concrete shall not be mixed on the surface of the street or decking on the line of the work, unless specifically permitted, but the mixing shall be done as close as



practicable to the work so as to avoid too great a lapse of time between the mixing and placing of the concrete.

SECTION No. 112. When concrete is mixed by hand the stone or gravel shall be spread on a platform in a bed about six (6) inches thick, and shall be thoroughly wet. Sand shall be spread on a platform and the requisite portion of cement spread on the sand. After thoroughly mixing the cement and sand, the dry mixture thus formed shall be spread evenly over the bed of stone wet as above, and the whole turned over until thoroughly mixed, but not less than four (4) turnings on the mixing board will be allowed in any case, water being added as necessary. Care shall be taken to keep the bed of concrete wet and avoid piling.

SECTION No. 113. Concrete shall be placed immediately after mixing, and shall be thoroughly compacted throughout the mass by ramming or spading, special tamping bars or tools being used as approved by the Engineer. The amount of water used in making the concrete shall be as approved by the Engineer.

SECTION No. 114. Concrete shall be allowed to set for twelve (12) hours, or more, if so directed, before any work shall be laid upon it; and no walking over or working upon it will be allowed while it is setting. Concrete shall not be flooded with water before it has thoroughly set.

SECTION No. 115. Before laying concrete on rock surfaces the latter shall be swept clean of all débris and dirt, and when laid on earth the earth shall be rammed as directed before placing the concrete.

SECTION No. 116. Wherever a section of concrete is necessarily left unfinished, leaving a surface which will be hard set before additional concrete can be laid, care shall be taken to flush the cement to such surface, and such dovetails or grooves shall be formed as may be necessary to insure a good bond

## SPECIFICATIONS—CONCRETE

with the new work. If deemed necessary by the Engineer, the joints shall be reinforced with steel bars or dowels, furnished and placed by the Contractor at his own expense.

SECTION NO. 117. In all cases of joining old with new work the old surfaces shall be thoroughly cleaned and wet and if required, a coating of mortar or cement shall be applied before placing the concrete.

SECTION NO. 118. Suitable forms shall be provided by the Contractor to support the concrete while it is being placed.

SECTION NO. 119. Forms shall be set true to line, firmly secured, and shall be so tight as to prevent water in the mortar from escaping; they shall be thoroughly wet before the concrete is placed and shall be removed as soon after the concrete has been placed as in the judgment of the Engineer may be done with safety to the work.

SECTION NO. 120. It is intended to obtain concrete impervious to water; the concrete shall be mixed and deposited with this end in view, and the surface of the concrete shall be troweled as may be directed in order to add to its imperviousness.

SECTION NO. 121. Concrete masonry, except in Storm Drain manholes, will be measured in place in the work to the prescribed net lines ordered by the Engineer and will be paid for at the price stipulated in **Schedule Item 6**, which price shall include the cost of all scaffolding, centers, forms, etc., and removing the same, all trowelling where required, and all other incidental work, labor and material. Where called for on the contract drawings, or ordered by the Engineer, the Contractor shall furnish and place steel reinforcing rods or bars, of the length and size, and in the location, required. Such rods and bars in place will be paid for at the price stipulated in **Schedule Item 21**.

All pipes or other objects, encased in or partially surrounded by the concrete masonry, (with the exception of reinforcing rods or bars) shall be deemed to lie outside of the ordered net lines, and their volume shall not be included in that allowed for payment.



## SUBDIVISION 11

### BRICK MASONRY

SECTION NO. 122. Bricks for masonry shall be of the best quality common bricks burned hard entirely through, regular and uniform in shape and size and of compact texture.

SECTION NO. 123. All brick masonry shall be laid in mortar of the quality described in Subdivision 9, except that in exposed locations coloring matter may be added, if required by the Engineer. The bricks shall be laid to line with joints in the face work not exceeding one-quarter ( $\frac{1}{4}$ ) of an inch in the beds, and three-eighths ( $\frac{3}{8}$ ) of an inch on ends; the bricks shall be thoroughly wet before laying and shall be completely imbedded in mortar under the bottom and on the sides and ends at one operation, care being taken to have every joint full of mortar.

All exterior surfaces shall be smooth and regular.

SECTION NO. 124. The inside faces of all exposed parts shall have all the mortar scraped off, shall be washed clean immediately after the centers have been struck, and shall be pointed and left in neat condition.

SECTION NO. 125. All bricks of whatever nature shall be carefully culled and if necessary gauged before laying, at the expense of the Contractor. No "bats" shall be used except in large masses of brick-work, where a moderate proportion, to be determined by the Engineer, may be used, but nothing smaller than half bricks.

SECTION NO. 126. All unfinished work shall be racked back or toothed, as directed by the Engineer, and before new work is joined to it the faces of the brick in the old work shall be scraped entirely clean, scrubbed with a stiff brush and shall be well moistened.

SECTION NO. 127. The cost of brick masonry of whatever kind is deemed to be included in the prices stipulated for vitrified and cast-iron drain pipe in **Schedule Items 17 and 17-A.**

## SUBDIVISION 12

### STEEL AND IRON

SECTION No. 128. Steel shall be made by the open-hearth process.

SECTION No. 129. The chemical and physical properties of finished material shall conform to the following limits:

Properties.	Structural Steel.	Rivet Steel.	Steel Castings.
Phos. (Max.) .....	.04%	.04%	.05%
Sulph. " .....	.05%	.04%	.05%
Mn. " .....	.60%	.60%	.80%
Si. " .....	.10%	.10%	.35%
Ult. Str. ....	60000±4000	50000±4000	65000 (Min.)
Yield Point (Min.)....	55% Ult.	55% Ult.	35000
Elongation, Min. % in 8 inches .....	1500000	1500000	
	Ult. Ten. Str.	Ult. Ten. Str.	
Elongation, Min. % in 2 inches .....			20%
Fracture .....	Silky.	Silky.	Silky, or Fine granular
Cold Bends without Fracture .....	180° flat.	180° flat.	120° (d.=3t.)

### WROUGHT IRON

SECTION No. 130. All wrought iron shall be double rolled, tough, fibrous and uniform in character. It shall be thoroughly welded in rolling and shall be free from surface defects.

Standard test specimens shall show an ultimate strength of at least fifty thousand (50,000) pounds per square inch, and an elongation of at least eighteen per centum (18%) in eight (8) inches, with fracture wholly fibrous. Specimens shall bend cold with the fibre, through one hundred and thirty-five degrees (135°), without sign of fracture, with inner radius not to exceed the thickness of the piece tested. When nicked and bent the fracture shall show at least ninety per centum (90%) fibrous.



## SPECIFICATIONS—STEEL AND IRON

### CAST IRON

SECTION No. 131. Cast iron shall be tough, gray iron made by the cupola process and shall contain not more than six-tenths per centum (0.6%) of phosphorus and not more than twelve one-hundredths per centum (0.12%) of sulphur. No mill cinder iron, white or burnt iron or inferior scrap of any kind will be permitted in the composition.

The quality of the iron entering into castings shall be determined by means of the "Arbitration Bar." This is a bar one and one-fourth ( $1\frac{1}{4}$ ) inches in diameter and fifteen (15) inches long, cast under the same circumstances as those which attended the casting of the full-sized piece. This bar shall sustain at the center, when resting upon two dull knife edges twelve (12) inches apart, a load of three thousand (3000) pounds with a deflection of at least one-tenth ( $1/10$ ) of an inch before rupture.

Two (2) sets of two (2) bars shall be cast from each heat; one set from the first and the other set from the last iron entering into the castings. Each set of two bars shall be made in a single mold.

SECTION No. 132. Castings must be sound, true to pattern, free from cracks, flaws and excessive shrinkage, and shall have smooth, clean surfaces. They must be neatly chiseled and wire-brushed before leaving the foundry. Castings which do not accurately conform to dimensions on the drawings will be rejected. Each casting shall have its distinguishing letter or number cast on it at the place indicated on the drawings.

### WORKMANSHIP

SECTION No. 133. The workmanship shall be equal to the best practice in modern bridge works.

SECTION No. 134. The Inspector shall make detailed reports of his inspection to the Engineer and may notify the Con-

## SPECIFICATIONS—STEEL AND IRON

tractor of any defects in the material or workmanship, but all acceptances made by him shall be considered temporary, and his inspection shall in no way relieve the Contractor of full responsibility for the character and accuracy of the work.

SECTION No. 135. The Contractor shall be responsible for all errors which can be discovered by checking or examining the drawings.

SECTION No. 136. Payment for steel will be made at the price stipulated in **Schedule Item 21**, which price shall include the cost of material delivered and erected in the work, of all necessary cleaning and of all other incidental work. The quantity of metal to be paid for shall be the weight actually placed in accordance with the drawings or orders.

SECTION No. 137. For miscellaneous castings payment will be made at the price stipulated in **Schedule Item 25**, which price shall include the cost of material delivered and erected in the work; also the cost of all necessary cleaning and painting (where painting is required) and of all other incidental work, labor and material.



## SUBDIVISION 13

### SURFACES RESTORED

SECTION NO. 138. As soon as the structure in any excavation or trench made within a street shall be completed and the trench backfilled, a temporary pavement shall be laid and maintained in a condition satisfactory to the Engineer; and after the earth shall, in the opinion of the Engineer, have become sufficiently settled, the Contractor shall proceed to restore the surface to a condition similar to, and equally as good as, that existing previous to the commencement of construction.

All the requirements as to street surface restored shall apply to the trenches for sewers, pipes or other subsurface structures along or off the route of the Storm Drain.

SECTION NO. 139. Payment for street surface restored of whatever character and work, labor and material incidental thereto, such as restoring manhole heads and covers, trees, etc., (except as included in **Schedule Item 25**) and such as providing and maintaining all temporary surfaces that may be necessary to maintain traffic pending the final placing of the permanent paving, will be made at the price stipulated in **Schedule Item 30 (h)**.

The foregoing provisions of this Subdivision apply only to the restoration of street surfaces where paved roadways, gutters or sidewalks actually exist at the time of the delivery of this contract. In cases where only the ordinary dirt roadway or sidewalks exist and in cases where no roadway or sidewalks exist, the Contractor will be required to backfill and restore such surfaces to their original grades and conditions at his own expense except that for restoring curbs where only the ordinary dirt roadway or sidewalks exist, payment will be made at the price stipulated in **Schedule Item 30 (o)**, which price shall include all incidental work, labor and material.

SECTION NO. 140. The measurement for payment for street surface restored will be to the ordered net lines of excavation.

SECTION NO. 141. All other street surface outside the ordered net lines of excavation, either along or off the route of the

## SPECIFICATIONS—SURFACES RESTORED

Storm Drain, that may have become damaged, directly or indirectly, as a result of the Contractor's operations, shall be restored by the Contractor at his own cost and expense to a condition similar to and equally as good as that existing previous to the commencement of construction.



## SUBDIVISION 14

### DRAIN PIPES AND MANHOLES

SECTION No. 142. Unless otherwise ordered by the Engineer, the drain pipe shall consist of hub and spigot vitrified earthenware pipe of the quality hereinafter specified. Connections shall consist of vitrified earthenware pipe and cast-iron soil pipe of the quality hereinafter specified. Outlets shall include one length of cast-iron pipe. Pipes shall be laid as required by these Specifications and as shown on the contract drawings, or as directed by the Engineer.

SECTION No. 143. Except in special cases all pipes shall be laid in the earth at the bottom of the trench accurately to the lines and grades furnished. Bearing shall be taken upon the barrel of each pipe for its entire length, and in no case shall the pipe take bearing upon the hub alone. No boulders, concrete or other hard object shall be permitted within six (6) inches of the outside surface of the pipe in any direction, except where the pipe is encased in concrete, unless otherwise directed by the Engineer. The ends of the pipe shall abut against each other in such manner that there shall be no shoulder or unevenness of any kind along the invert of the drain. The joints shall be made with Portland cement mortar, composed of one (1) part of cement and one (1) part of sand, and shall be as nearly water tight as possible. The procedure in making the joint shall be as follows:

Before inserting the spigot end of the pipe into the hub or socket, the lower half of each socket shall be plastered on the inside with a layer of cement mortar mixed as above specified. Into this shall be pressed the loop of a hemp or jute gasket of one continuous piece long enough to surround the pipe, and of such thickness as to bring the pipe to the required relative position. The gasket shall be of untarred jute or hemp, and shall be soaked in a satisfactory mixture of neat Portland cement and water. The spigot end of the next pipe shall then be inserted and the upper half of the socket filled with cement mortar, after which the ends of the gasket shall be brought up over the

pipe, and the gasket forced into the mortar with a suitable caulking tool and carefully caulked in place. The remainder of the joint shall be filled with cement mortar applied with the hands, protected with rubber mittens, well pressed and caulked into place, after which the joint shall be beveled off with mortar for a distance of two (2) inches from the outer edge of the bell. The joint shall be wrapped in unbleached cotton cloth, securely tied to prevent the mortar from slipping or being otherwise injured. No surplus mortar or other foreign substance shall project into the pipe from the joints, and each joint shall be properly cleaned with a suitable scraper or by other approved means before the mortar becomes hardened.

The ends of the pipe which enter masonry shall be neatly cut to fit the face of the masonry. When directed, such cutting shall be done before the pipes are built in.

SECTION No. 144. When the trench is properly prepared and before laying any drain, the Contractor shall notify the Engineer, who will thereupon cause the grades for the drain to be tested, and if correct the drain shall then be laid in the presence of the Inspector, and no construction work shall be done in his absence. All materials and labor required by the Engineer in connection with providing suitable lines and grades for the work shall be furnished by the Contractor at his own expense.

The trenches shall be kept entirely free from water while the foundation and masonry are being constructed and the drain laid. In no case shall water be allowed to flow over the invert or foundation or through the drain until the mortar is thoroughly set.

SECTION No. 145. Where shown on the contract drawings or as directed by the Engineer, double or single wye branches shall be laid for connections to the existing or proposed arch drains.

SECTION No. 146. Connections shall be laid as shown on the contract drawings or as directed by the Engineer, to the lines and grades given. The connections shall be of six (6) inch vitrified



## SPECIFICATIONS—DRAIN PIPES AND MANHOLES

pipe and six (6) inch extra heavy soil pipe, as shown, with proper curved pipe connections. Where the new work connects with the existing arch drains at the base of the columns, the Contractor shall cut away the existing concrete where necessary, and shall connect the new six (6) inch soil pipe to the existing drain with a lead joint, properly caulked. All other joints in the connections shall be made of Portland cement in the manner hereinbefore prescribed.

SECTION No. 147. At joints between the old and the new work, and as shown on the drawings or as directed by the Engineer, the connection shall be encased in concrete.

SECTION No. 148. After the pipes have been jointed and the joints have become sufficiently set, earth backfill shall be placed about the pipe as specified in Subdivision 6. Selected fine material shall be used for the backfill about the pipe, and no stone, concrete or other hard material shall be used for backfilling until the pipe shall have been covered to a minimum depth of one (1) foot, and then only as hereinbefore provided.

SECTION No. 149. The exposed ends of the drain shall in all cases be protected with a board or other stopper carefully fitted to the pipe, to prevent earth or other substance from washing in, and in no case shall brick or stone be used for that purpose.

SECTION No. 150. If in the opinion of the Engineer it is found impracticable during the progress of the work to construct any part or parts of the Storm Drain, including manholes or other appurtenances, according to the contract drawings, owing to the presence of unknown subsurface structures or other contingencies, the Contractor shall construct such drains, manholes or appurtenances in the location given by and according to the directions of the Engineer.

SECTION No. 151. Where shown upon the contract drawings, or as required by the Engineer, the Contractor shall build

foundations of plain or reinforced concrete, and shall also place a protective covering of concrete about the Storm Drain or its connections. Such foundations or protection, whether of plain or reinforced concrete will be paid for at the price stipulated in **Schedule Item 6**.

SECTION No. 152. Under certain circumstances it may be necessary to excavate the trenches for the Storm Drain below the established grade to reach a proper foundation. In such an event the Engineer may require a concrete foundation as provided in the preceding Section or he may require that the trench be refilled with suitable earth or stone or gravel. Where additional excavation is required, payment will be made for the volume between a plane six (6) inches below the invert of the drain as laid, and the ordered line for such additional excavation, for the ordered net width of excavation for the trench. Where stone or gravel refill is required, payment will be made at the price stipulated in **Schedule Item 14** for that volume included within the net lines of such refill as ordered by the Engineer. Where earth refill is required, payment therefor will be deemed to be included in the prices stipulated for excavation in **Schedule Items 2-A and 3-A**.

Should the Contractor, for any purpose, excavate below the established net lines at places not ordered by the Engineer, he shall at his own expense refill the excavation in accordance with the orders of the Engineer.

SECTION No. 153. At the ends of the temporary outlets the Contractor shall build a concrete bulkhead with apron and paving as shown on the contract drawings. Payment for the bulkhead and apron will be made at the price stipulated in **Schedule Item 6**. Payment for the pavement will be made at the price stipulated in **Schedule Item 14**.

SECTION No. 154. Tile pipe drains shall be built of vitrified, salt glazed stone-ware pipe, with extra deep and wide sockets and corrugated spigot ends. The pipe shall be of the best quality, thoroughly and perfectly burnt, without warps, cracks or im-



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perfections, well and smoothly glazed over the entire inner and outer surfaces and perfect in shape.

SECTION No. 155. The sizes of the pipes shall be designated by their interior diameters. Each pipe shall be a true cylinder, of even thickness throughout, and shall conform to the following scheduled dimensions:

## DOUBLE STRENGTH TILE PIPE; EXTRA DEEP AND WIDE SOCKETS

Diameter.	Thickness of shell.	Depth of socket.	Length of plain, straight pipe.	Weight of pipe per ft.	Annular space.
6"	$\frac{5}{8}$ "	$2\frac{1}{2}$ "	2'	16 lbs.	$\frac{5}{8}$ "
8"	$\frac{3}{4}$ "	$2\frac{3}{4}$ "	3'	25 "	$\frac{5}{8}$ "
10"	$\frac{7}{8}$ "	$2\frac{3}{4}$ "	3'	37 "	$\frac{5}{8}$ "
12"	1"	3"	3'	45 "	$\frac{5}{8}$ "
15"	$1\frac{1}{4}$ "	3"	3'	75 "	$\frac{5}{8}$ "
18"	$1\frac{1}{2}$ "	$3\frac{1}{4}$ "	3'	118 "	$\frac{5}{8}$ "
20"	$1\frac{2}{3}$ "	$3\frac{1}{2}$ "	3'	148 "	$\frac{5}{8}$ "
22"	$1\frac{5}{6}$ "	$3\frac{3}{4}$ "	3'	157 "	$\frac{5}{8}$ "
24"	2"	4"	3'	190 "	$\frac{5}{8}$ "

SECTION No. 156. All "special" vitrified pipe shall conform to the dimensions given for plain, straight pipe.

SECTION No. 157. Pipes having spurs not less than six (6) inches in diameter with hubs moulded thereon for connections shall be furnished and laid at such points as indicated on the drawings or as directed by the Engineer, and when not immediately used, they shall be sealed on the outside with approved vitrified earthenware covers set in mortar.

SECTION No. 158. The soil pipe shall be cast-iron pipe of the quality known as "extra heavy." The pipes shall be cylindrical in shape, of even thickness throughout, with well moulded

## SPECIFICATIONS—DRAIN PIPES AND MANHOLES

bells or hubs attached, and free from sand or blow holes or other imperfections. All bends, tees, branches and other special fittings shall conform to the above qualifications so far as they apply.

SECTION No. 159. The masonry of manholes shall be carried up so that the top of the iron head when set shall be at the level of the established grade of the street at that point or to such height as the Engineer may direct, and from templates correctly made and set at top and bottom, between which not less than eight (8) lines shall be drawn. All joints shall be neatly struck and pointed on the inside. Each manhole shall be plastered thoroughly on the outside with cement mortar one (1) inch in thickness, mixed in the proportion of one part of cement to two parts of sand.

SECTION No. 160. Generally the foundations for manholes shall be of concrete not less than twelve (12) inches below the invert elevation of the drain. When any foundation additional to that indicated on the drawings is required, it shall be built as directed by the Engineer.

SECTION No. 161. Drain pipes shall be built in and trimmed, when necessary, so as to be flush with the inner face of the manhole and an arch, laid in cement mortar, shall be turned over the pipe.

SECTION No. 162. The invert shall be built of vitrified brick or concrete masonry, as indicated on the contract drawings.

SECTION No. 163. A reasonable number of bats not smaller than half bricks may be used in the construction of manholes or receiving basins, provided all interstices are thoroughly filled with mortar.

SECTION No. 164. Standard steps of good quality of galvanized wrought iron, of the size, length and shape required for steps, shall be built into the interior sides of all manholes at a



## SPECIFICATIONS—DRAIN PIPES AND MANHOLES

distance apart of not more than fifteen (15) inches vertically and they shall be so arranged that the lowest step shall be not more than two (2) feet above the bench at the bottom of the manholes nor more than two (2) feet above the invert of the drain where there is no bench. Each manhole head shall be cast with a wrought-iron step on the inside, when directed by the Engineer.

SECTION No. 165. A cast-iron manhole head and cover of the quality specified for cast iron, and of the pattern shown on the contract drawings, and in dimensions, weight and all other respects satisfactory to the Engineer shall be fitted on a bed of mortar to each of the above described manholes. Manhole heads and covers which do not conform to these specifications shall be removed at once from the work.

SECTION No. 166. Covers to be used on manholes in the street and parked places shall be perforated. Those used on sidewalk manholes shall be tight-fitting, without perforations.

SECTION No. 167. Each manhole head and cover shall have its weight distinctly marked upon it with oil paint. The following shall be allowed as the minimum and maximum weights:

Street manhole head, 475 to 500 pounds;  
Street manhole cover, 135 to 150 pounds;  
Sidewalk manhole head, 300 to 310 pounds;  
Sidewalk manhole cover, 100 to 110 pounds.

SECTION No. 168. In the places shown on the contract drawings as parked space, manhole heads and covers of the weight specified for sidewalk heads and covers shall be used. Where manholes are built in the roadway, the weights shall be as specified for street manhole heads and covers. All heads and covers shall be cast in accordance with the contract drawings.

SECTION No. 169. Payment for manhole heads, covers and steps will be made at the price stipulated in **Schedule Item 25**,

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which price shall include the cost of all work, labor and material applicable thereto.

SECTION No. 170. Main drains shall be measured from the center of one manhole to the center of the next adjacent manhole, along the axis of the pipe. Connections shall be measured from the nearest end of the existing column drain to the center line of the main drain, along the axis of the pipe, except that for connections entering manholes the measurement shall be from the existing drain to the nearest interior face of the manhole, along the axis of the pipe. Where the connection is not attached to the existing structure, the measurement shall be from the end of the connection as laid to the center line of the main drain, or inside face of the manhole as the case may be. Outlets shall be measured from the center line of the nearest manhole to the exterior face of the outlet.

SECTION No. 171. Payment for drains and their connections will be made for drain complete at the prices stipulated in **Schedule Item 17** and **Schedule Item 17-A**. These prices shall include the cost of bends, branches and specials complete, of manholes, foundations for manholes, inverts of whatever character, brickwork and plastering, and all other work, labor and material necessary for installing the drain pipes in place, except as herein elsewhere *specifically* provided.



## SUBDIVISION 15

### SPECIAL MATTERS

SECTION No. 172. The provisions of this subdivision are for the purpose of covering matters which are special to this contract and which are not fully covered in the general specifications, but except as herein otherwise *expressly* provided the foregoing general specifications are to be construed as applying to matters under this subdivision. In case of any conflict between the provisions of the foregoing general specifications and the provisions of this subdivision, the provisions of this subdivision shall govern.

At various points along the Storm Drain it will be necessary to make an earth fill over the drain. Such fill shall be composed of and deposited in accordance with the requirements of Subdivisions 6 and 14. The net lines of such fill will be as determined by the Engineer and payment will be made at the price stipulated for earth excavation in **Schedule Item 2-A**, which price shall include the cost of all incidental work, labor and material.

## CHAPTER IV

### SECURITY TO BE FURNISHED BY CONTRACTOR

ARTICLE XXVII. Simultaneously with the execution and delivery of this contract the Contractor shall give security for the performance of his obligation by filing with the Comptroller a bond in the form annexed hereto and entitled "**Form of Contractor's Bond,**" executed by the Contractor and by two or more sureties to be corporations or persons approved by the Commission, in the sum of three thousand dollars (\$3,000). The execution of the bond must be duly proved before the delivery of the bond in the form of proof essential to entitle a deed to record in the State of New York and full affidavits of justification of the sureties must be added. In case any of the sureties upon the bond shall become insolvent or unable in the opinion of the Commission to pay promptly the amount of such bond to the extent to which such surety might be liable, then the Contractor within ten (10) days after notice by the Commission to the Contractor shall, by supplemental bond or otherwise, substitute another and sufficient surety approved by the Commission in place of the surety so insolvent or unable. If the Contractor shall fail within such ten (10) days or such further time, if any, as the Commission may grant to substitute another and sufficient surety, then the Contractor shall, if the Commission so elect, be deemed to be in default in the performance of his obligations hereunder and upon the said bond, and in addition to any and all other remedies the Commission may terminate this contract or may bring any proper suit or proceeding against the Contractor and the sureties or either of them or may require the Comptroller to deduct from any moneys then due or which thereafter may become due to the Contractor under this contract the amount for which the surety insolvent or unable as aforesaid shall be held and bound upon the bond; and the moneys so deducted shall be held by the Comptroller as collateral security



## SECURITY TO BE FURNISHED BY CONTRACTOR

for the performance of the condition of the bond and such moneys shall in such case be deemed to have been paid to the Contractor upon this contract.

ARTICLE XXVIII. The Contractor may, upon the approval of the Commission, deposit with the Comptroller in lieu of said bond cash equal in amount to the entire amount of the said bond or securities which are worth not less than the entire amount of such bond. If securities be deposited, they shall be securities which are lawful for the investment of funds of savings banks within the State of New York and shall be approved by the Commission. A schedule of such securities with their values shall be annexed hereto and entitled Schedule of Securities, and there shall be deposited with such securities the written approval of the Commission which it shall give when satisfied as to the character and value thereof. All securities when deposited must be payable to, or run in favor of, or be transferred to, the Comptroller. In case any of the securities so deposited shall, in the opinion of the Commission, at any time cease to be of the character of securities which are lawful for the investment of the funds of savings bank within the State of New York or shall in the opinion of the Commission at any time become of less value than the value stated for it or them in the said schedule, then within ten (10) days after notice to the Contractor of the objection of the Commission, the Contractor shall either substitute therefor securities which shall be approved by the Commission as of the character aforesaid and as being of at least the value of the former securities to which the Commission shall have objected as such value was originally stated in the said schedule or shall deposit with the Comptroller in cash the amount of such value of such former securities as so originally stated. In case the Contractor shall not within such ten (10) days or such further time, if any, as the Commission may grant substitute such new securities or make such deposit of cash, he shall, if the Commission so elect, be deemed to be in default in the performance of his obligations under this contract; and in addition to any and all other remedies against the Contractor, the Commission may require the Comptroller to deduct from

## SECURITY TO BE FURNISHED BY CONTRACTOR

any moneys then due or which thereafter may become due to the Contractor under this contract the amount of the original valuation of such securities objected to, and to hold such amount in lieu of such securities as if part of the original deposit or as if deposited with the Comptroller as aforesaid, and such moneys shall in such case be deemed to be paid to the Contractor upon this contract. The securities so objected to shall upon such substitution of securities or deposit of cash in lieu thereof be returned to the Contractor.

The City shall from time to time collect all interest, dividends and other income on any securities deposited by the Contractor and shall pay the same, when and as collected, to the Contractor. If the securities are in the form of coupon bonds, the coupons as they respectively become due shall be delivered to the Contractor. If the deposit be made in cash, interest shall be paid to the Contractor on such deposit at the average rate of interest received by the City on its bank balances during such period. Provided, however, that the Contractor shall not be entitled to interest, dividends or other income on any cash which shall be used or applied as hereinafter provided or on any securities the proceeds of which shall be used or applied as hereinafter provided.

ARTICLE XXIX. The said deposit, whether in cash or securities, in the form and as the same shall at any time be, shall be security for the faithful performance by the Contractor of all the covenants, conditions and requirements specified and provided for in this contract. In case of any default on the part of the Contractor in such performance and in the further case that the City shall for or by reason of such default, whether by reason of employment of another contractor or contractors or otherwise, incur or become liable for expense or be required to make any payment or incur or suffer any loss or damage, then the Comptroller shall, upon the requirement of the Commission, forthwith pay or apply to the use of the City the amount of such expense, payment, loss or damage, including any liquidated damages, out of the said deposit in cash or securities or out of the portion of the deposit remaining at the time.



## SECURITY TO BE FURNISHED BY CONTRACTOR

ARTICLE XXX. If such deposit be in securities, the Comptroller shall, upon the requirement of the Commission, in order to make such payment or application to the use of the City, sell at public auction in New York any of the securities which may then constitute part of such deposit upon notice to be published in three daily newspapers, the first publication to be not less than ten (10) days before the sale and such publication to be made three (3) times within such ten (10) days. The Comptroller in his discretion may, and upon the requirement of the Commission shall, adjourn such sale from time to time by announcement at the time and place appointed for such sale or for such adjourned sale or sales; and without further notice or publication, he may make such sale at the time and place to which the same shall be so adjourned. The Comptroller shall, upon the requirement of the Commission, deduct from the proceeds of any such sale all expenses thereof and of such advertisement and pay and apply to the use of the City so much of the residue of such proceeds as may be necessary for the purpose aforesaid. And the Contractor within ten (10) days after notice from the Commission so to do shall by further deposit, according to the requirement of the Commission, of money or securities of the character aforesaid approved by the Commission restore the said deposit with the Comptroller to the full amount originally required; and in case the Contractor shall not within such ten (10) days or such further time, if any, as may be granted by the Commission, make such further deposit of money or securities, he shall, if the Commission so elect, be deemed to be in default in the performance of his obligations under this contract; and in addition to any and all other remedies against the Contractor the Commission may require the Comptroller to deduct from any moneys then due or which thereafter may become due to the Contractor under this contract such amount as may be necessary to restore the said deposit with the Comptroller to the full amount originally required; and the Comptroller shall hold the money so deducted as if part of the original deposit or as if deposited with him as aforesaid; and such moneys shall in such case be deemed to be paid to the Contractor upon this contract. In addition to, or in lieu of, the sale above provided for, the Commission may, in the

## SECURITY TO BE FURNISHED BY CONTRACTOR

name and in behalf of the City, bring any appropriate suit or proceeding in any proper court to enforce the lien and claim of the City in and upon the said deposit, whether such deposit be in money or securities.

ARTICLE XXXI. If at any time when the Contractor shall otherwise be entitled to a return of the said deposit, there shall be pending any claim for injury or alleged injury to person or property occurring or alleged to have occurred on account of the work hereunder, whether by reason of the negligence, fault or default of the Contractor or otherwise, or any claim for infringement or alleged infringement of patents, or any other claim on account of any neglect, fault or default or alleged neglect, fault or default of the Contractor, for which it shall be claimed that the City shall be liable, then and in that case the said deposit, including all interest, dividends and other income thereafter accruing thereon, or such part thereof as the Commission may prescribe shall, upon the requirement of the Commission, be reserved by the Comptroller as security against such claims for a time not exceeding the time when such claims would be legally barred. If and when the liability of the City on such claim or claims shall have been established by a judgment of a court of competent jurisdiction or such claim or claims shall have been admitted by the Contractor to be valid, the City may deduct the amount of such claim or claims from the said deposit before the balance of the said deposit shall be returned to the Contractor as hereinafter provided. For the purpose of making such deduction the Comptroller may sell any of the securities which may constitute part of such deposit in the manner provided in Article XXX.

ARTICLE XXXII. When the Contractor shall have fully completed the Works according to the terms of this contract and the Commission shall so certify, the Comptroller shall pay and deliver to the Contractor the said deposit or so much thereof as shall not be reserved, or shall not have been used or applied, for any of the purposes herein mentioned.



SECURITY TO BE FURNISHED BY CONTRACTOR

ARTICLE XXXIII. In addition and as further security there shall be deducted and retained ten per centum (10%) of the amounts certified from time to time to be due to the Contractor. Such retained percentages shall be held as further security for the faithful performance by the Contractor of all the conditions, covenants and requirements specified and provided for in this contract. The Contractor may from time to time withdraw portions of the amounts so retained upon depositing with the Comptroller corporate stock of the City of a market value equal to the amount withdrawn, in which event the provisions of this chapter in respect of securities shall apply to such corporate stock.

## *CHAPTER V*

### *PAYMENTS TO CONTRACTOR*

ARTICLE XXXV. In order to assist the Contractor to prosecute the work advantageously, the Engineer shall, from time to time as the work progresses, but not more often than once a month, make in writing an estimate, such as in his opinion shall be just and fair, of the amount and value of the work done and materials incorporated in the work by the Contractor according to the terms of this contract (but it is understood that in making such estimates the Engineer shall not necessarily be governed by the prices contained in the Schedule of Unit Prices), provided, however, that estimates may at any time be withheld or reduced if, in the opinion of the Engineer, the work is not proceeding in accordance with this contract. The first such estimate shall be of the amount and value of the work done and materials incorporated in the work since the Contractor commenced the performance of this contract on his part. Every subsequent estimate except the final estimate shall be of the amount and value of the work done and materials incorporated in the work since the last preceding estimate was made, provided, however, that no such estimate shall be required to be made when, in the judgment of the Engineer, the total value of the work done and materials incorporated in the work since the last preceding estimate amounts to less than five thousand dollars (\$5,000). No materials, not incorporated in the work, shall be included in any estimate.

ARTICLE XXXVI. Such estimates shall not be required to be made by strict measurement, but they may be made by measurement or by estimation or partly by one method and partly by the other, and it shall be sufficient if they are approximate only.



## PAYMENTS TO CONTRACTOR

ARTICLE XXXVII. Upon each such estimate being made and certified in writing to the Commission, the Commission shall prepare and certify a voucher for ninety per centum (90%) of the amount stated in such estimate or certified to be the value of the work done and materials furnished as provided in Article XXXIII, and the City shall within thirty (30) days after the date of the certification of such voucher by the Commission pay the same; provided, however, that the City may at all times reserve and retain from said partial payments or any of them, in addition to the ten per centum (10%) above mentioned to be retained and reserved, any sum or all sums which by the terms hereof or of any law of the State of New York it is or may be authorized to reserve or retain.

ARTICLE XXXVIII. Whenever, in the opinion of the Engineer, the Contractor shall have completely performed this contract on his part and all work under this contract, the Engineer shall so certify in writing to the Commission and in his certificate shall state from actual measurements the whole amount of work done by the Contractor and also the value of such work under and according to the terms of this contract. On the expiration of forty (40) days after the acceptance by the Commission of the work herein agreed to be done by the Contractor and the filing of a certificate of the completion and acceptance of said work in the office of the Comptroller signed by the Engineer and the Commission, the City shall pay to the Contractor the amount, if any, remaining after deducting from the amount or value of such work under and according to the terms of this contract as stated in such last-mentioned certificate all such sums as shall theretofore have been paid to the Contractor under any of the provisions of this contract (exclusive of interest, if any, paid under the provisions of Article XXXIX) and also any sum or all such sums of money as by the terms hereof the City is or may be authorized to reserve or retain; provided, that nothing herein contained shall be construed to affect the right, hereby reserved, of the Commission to reject the whole or any portion of the aforesaid work should the said certificate be found or known to be inconsistent with the terms of this contract or other-

## PAYMENTS TO CONTRACTOR

wise improperly given. All prior certificates upon which partial payments may have been made, being merely estimates, shall be subject to correction in the final certificate, which final certificate may be made without notice thereof to the Contractor or of the measurements upon which it is based.

ARTICLE XXXIX. If the payment of the amount due the Contractor on any voucher shall be delayed beyond the time stipulated in Article XXXVII in the case of partial payment, or Article XXXVIII in the case of final payment, the City shall pay the Contractor interest on such amount at the rate of four and one-half per centum ( $4\frac{1}{2}\%$ ) per annum for the period of such delay; it being understood that such payments of interest, if any, are to be in lieu of any claim of the Contractor for alleged damages for breach of contract or otherwise in case of delayed payments. Provided, however, that the Contractor shall not be entitled to interest on any sum or sums which by the terms hereof or of any law of the State of New York the City may be authorized to reserve or retain. The term for which interest shall be paid shall be reckoned, in the case of a partial payment from the thirtieth day after the certification of such voucher by the Commission, and in the case of the final payment from the fortieth day after the acceptance of the work by the Commission and the filing of the proper certificate of completion and acceptance in the office of the Comptroller, to the date of payment of the voucher. The date of payment of a voucher shall be considered the day on which the voucher is ready for payment as evidenced by the records of the Department of Finance. If interest shall become due on any partial payment, the amount thereof, as determined by the Commission, shall be added to a succeeding payment. If interest shall become due on the final payment, it shall be paid on a supplementary voucher prepared by the Commission and forwarded to the Comptroller for payment in the usual manner.

ARTICLE XL. The City shall not nor shall any department or officer thereof be precluded or estopped by any return or certificate made or given by the Commission, the Engineer or



## PAYMENTS TO CONTRACTOR

other officer, agent or appointee thereof under any provision of this contract from at any time either before or after the final completion and acceptance of the work and payment therefor pursuant to any such return or certificate, showing the true and correct classification, amount, quality and character of the work done and materials furnished by the Contractor or any other person under this contract or from showing at any time that any such return or certificate is untrue and incorrect or improperly made in any particular or that the work and materials or any part thereof do not in fact conform to the specifications; and the City shall not be precluded or estopped, notwithstanding any such return or certificate and payment in accordance therewith, from demanding and recovering from the Contractor such damages as it may sustain by reason of his failure to comply with this contract or the specifications.

ARTICLE XLI. Neither the acceptance of the Commission or its Engineer or any of its employees nor any order, measurement or certificate by the Engineer nor any order by the Commission for payment of money nor any payment for, nor acceptance of, the whole or any part of the work nor any extension of time nor any possession taken by the Commission or its employees shall operate as a waiver of any portion of this contract or of any power herein reserved to the Commission or of any right to damages herein provided; nor shall any waiver of any breach of this contract be held to be a waiver of any other or subsequent breach.

ARTICLE XLII. The acceptance by the Contractor of the final payment aforesaid shall be and shall operate as a release to the City from all claim and liability to the Contractor for anything done or furnished for, or relating to, the work or for any act, neglect, fault or default of the Commission, the City or of any person relating to or affecting the work, except only the claim against the City for the remainder, if any there be, of the amounts kept or retained as provided in this contract.

## PAYMENTS TO CONTRACTOR

ARTICLE XLIII. If the Contractor shall claim compensation for any damage sustained by reason of any act, neglect, fault or default of the City or the Commission or their agents, he shall, within ten (10) days after the sustaining of such damage, make a written statement to the Engineer of the nature of the damage sustained. On or before the fifteenth day of the month succeeding that in which any such damage shall have been sustained, the Contractor shall file with the Engineer an itemized statement of the details and amount of such damage, and unless such statement shall be made as thus required, his claim for compensation may in the discretion of the Commission be forfeited and invalidated and he shall not be entitled to payment on account of any such damage.

ARTICLE XLIV. If at any time before or within thirty (30) days after the whole work agreed herein to be performed has been completed and accepted by the City, any person or persons claiming to have performed any labor or furnished any material toward the performance or completion of this contract shall file with the Commission and with the Comptroller any such notice as is described in the Lien Law, the City may retain from any moneys which would otherwise be payable to the Contractor hereunder by the City an amount or amounts sufficient to satisfy and discharge the amount in such notice claimed to be due, together with the costs of any action or actions brought to enforce such lien created by the filing of such notice, until such lien shall be discharged as provided by law. If such lien shall be foreclosed according to law, then the City may pay the amount necessary to satisfy such lien, with interest and costs, to the person entitled thereto, and such payment shall be deemed to be a payment hereunder to the Contractor by the City. If the amount or amounts so retained shall not be sufficient to satisfy such lien so foreclosed with interest and costs, the deficiency may be retained by the City out of any moneys thereafter becoming due to the Contractor hereunder.



## *CHAPTER VI*

### *CONTRACTOR'S LIABILITY FOR INJURIES TO PERSONS OR PROPERTY*

ARTICLE XLV. The Contractor expressly admits and covenants that the drawings and specifications and other provisions of this contract, if the work be done without fault or negligence on the part of the Contractor, do not involve any danger to the foundations, walls or other parts of adjacent, abutting or overhead structures or surfaces; and the Contractor will at his own expense make good any damage that shall, in the course of construction, be done to any such foundations, walls or other parts of adjacent, abutting or overhead structures or surfaces. The liability of the Contractor under this covenant is absolute and is not dependent upon any question of negligence on his part or on the part of his agents, servants or employees, and the neglect of the Engineer to direct the Contractor to take any particular precautions or to refrain from doing any particular thing shall not excuse the Contractor in case of any such damage.

It is the intention of the parties to this contract, and it is agreed, that in addition to indemnifying the City against all claims for damages, the Contractor shall also be liable to the owners of adjacent, abutting or overhead property or structures and to all tenants, lessees, or occupants of such structures for all physical injuries to property or person which may be occasioned by the work of construction, even in cases where such owners, tenants or occupants have no legal claim against the City for such injuries.

ARTICLE XLVI. The Contractor shall during the performance of the work safely maintain the traffic on streets, avenues, highways and other public places as provided in the specifications and shall take all necessary precautions and place proper guards for the prevention of accidents and shall put up and keep at night suitable and sufficient lights.

## CONTRACTOR'S LIABILITY

ARTICLE XLVII. The Contractor shall be solely responsible for all physical injuries to person or property occurring on account of the work hereunder, and shall indemnify and save harmless the City from liability upon any and all claims for damages on account of such injuries to person or property or on account of any neglect, fault or default of the Contractor and from all costs and expenses in suits which may be brought against the City on account of any such injuries to person or property or on account of any such neglect, fault or default; it being distinctly understood, stipulated and agreed that the Contractor shall be solely responsible and liable for and shall fully protect and indemnify the City against all claims for damages to person or property occasioned by or resulting from blasting or other methods or processes in the work of construction, whether such damages be attributable to negligence of the Contractor or his employees or otherwise. If compensation for any such injury to property shall be included in any judgment or award in any action or proceeding, the Contractor shall upon demand promptly reimburse the City for any payments made by it on account thereof.

ARTICLE XLVIII. In case any claim shall be made by any person or corporation against the Contractor or the City for injury or alleged injury to person or property occurring or alleged to have occurred on account of the work hereunder, whether by reason of the negligence, fault or default of the Contractor or otherwise, or for any infringement or alleged infringement of patents or for any neglect, fault or default or alleged neglect, fault or default of the Contractor, the amount of such claim or so much thereof as the Commission may deem reasonable shall, upon the requirement and in the discretion of the Commission, be retained by the Comptroller out of any moneys then due or thereafter growing due to the Contractor hereunder (in addition to the other sums herein authorized to be so retained) as security for the payment of such claim or claims. If and when the liability of the City or the Contractor on such claim or claims shall have been established by a judgment of a court of competent jurisdiction or such claim or claims



## CONTRACTOR'S LIABILITY

shall have been admitted by the Contractor to be valid, the said claim or claims may be paid from the amount so retained and the balance, if any, paid to the Contractor. Should there be any unsatisfied claim or claims for injury or alleged injury to person or property occurring or alleged to have occurred on account of the work hereunder, whether by reason of the negligence, fault or default of the Contractor or otherwise, or for any infringement or alleged infringement of patents or for any neglect, fault or default or alleged neglect, fault or default of the Contractor at the time when the final voucher for the work is prepared and certified, the Commission shall have the right to retain out of the final payment and to deduct from the amount of the final voucher a sum in its judgment sufficient to protect the City in regard to all unsatisfied claims as aforesaid, and in case the amount thus retained should be insufficient to pay the amount adjudicated to be due upon such claim or claims, the City may sue for and recover from the Contractor the amount or balance as a debt from the Contractor to the City. The Commission may further, if in its judgment such a course is necessary or proper, at the time of preparing and certifying the final voucher for the work and as a condition of preparing and certifying the same, require the Contractor to continue his bond or other security or any part thereof as security against any claims then unsatisfied or not presented for a time not exceeding the time when such claims would be legally barred.

ARTICLE L. All risk of loss or damage to the Works or to any part thereof or to any of the materials, plant, tools, appliances or other things used in doing the work prior to final completion is assumed and shall be borne by the Contractor, and any such loss or damage shall be made good by the Contractor at his own cost, and the construction shall be carried forward by him in accordance with this contract without additional cost to the City by reason of such loss or damage.

## *CHAPTER VII*

### *CITY TO SECURE CONTRACTOR AGAINST INTERFERENCE BY INJUNCTIONS, ETC.*

ARTICLE LI. The City hereby stipulates and covenants to and with the Contractor that the City will secure and assure to the Contractor so long as the Contractor shall perform the stipulations of this contract, the right to construct the Storm Drain as prescribed in this contract free of all right, claim or other interference, whether by injunction, suit for damages or otherwise, on the part of any owner, abutting owner, or other person; but not including any interference, legal or otherwise, by patentees or persons claiming to be patentees of tools, methods or appliances.

ARTICLE LII. The Contractor shall hold himself and shall be responsible for any claims made against the City for any infringement of patents by the use of patented tools, articles or appliances in the performance or completion of the work or by the use of any process or method connected with the work or by the use of any materials used upon the work; and he shall save harmless and indemnify the City from and against all costs, expenses and damages which the City shall incur or be obliged to pay by reason of any such infringement.



## CHAPTER VIII

### *TIME FOR COMPLETION, DAMAGES FOR DELAY, ETC.*

ARTICLE LIV. Time is of the essence of this contract. The Contractor shall begin actual work within ten (10) days after the date of the delivery of this contract and shall thenceforth prosecute the work continuously and diligently. All the work covered by this contract shall be completed in all respects within three (3) months after the date of the delivery of this contract.

ARTICLE LV. In the event of delay in completion of the Works beyond the period herein prescribed or beyond the period to which such time may be extended by resolution of the Commission for good cause shown, the City shall, whether the working force be increased as provided in the specifications or not, be paid damages for such delay. Inasmuch as the amount of such damages will be extremely difficult to ascertain, especially in view of the fact that the Storm Drain is a part of the drainage system of a rapid transit railroad and that any delay in the construction of the Storm Drain may result in serious damage to said railroad, it is hereby expressly agreed that such damages shall be liquidated and paid as follows: The Contractor shall pay to the City for each and every day, except Sundays and legal holidays, that he shall be in default in completing in all respects the work covered by this contract the sum of fifty dollars (\$50), which sum is hereby agreed upon not as a penalty but as liquidated damages which the City will suffer by reason of such default. The City shall have the right to deduct such amounts from any moneys due or which may thereafter become due to the Contractor under this contract. But in case the Contractor shall be actually and necessarily delayed by reason of any labor strike not caused or instituted or provoked by the Contractor or by any subcontractor, agent or representative of the Contractor, or in case the Contractor shall be

TIME FOR COMPLETION, DAMAGES FOR DELAY, ETC.

actually and necessarily delayed by any injunction or by any interference of public authority or by the suspension of the whole or any part of the work by the Commission as provided in Article LVII, and in case the Contractor cannot, notwithstanding such strike, injunction, interference or suspension, with reasonable diligence make up for the delay so occasioned by speedier work when the Contractor shall not be so delayed, then the said date for completion shall except as hereinafter provided be extended by resolution of the Commission to a date later than the expiration of the said period of three (3) months by the amount of the time of such delay as determined by the Commission.

ARTICLE LVI. But no injunction, strike or interference of public authority shall be ground for such extension unless and until the Contractor shall give the Commission notice of the injunction or other cause of delay, with copies of the injunction or other orders and of the papers upon which the same shall have been granted, and no extension shall be granted except for the delay occasioned after the giving of such notice. Nor shall any such extension be granted in any case unless the Contractor shall prove to the satisfaction of the Commission all the facts which entitle him to such extension. The Commission and the City or either shall be accorded the right to intervene or become a party to any suit or proceeding in which any such injunction shall be obtained and to move to dissolve the same or otherwise, as the Commission or the City may deem proper. If necessary the Corporation Counsel or the Counsel to the Commission or both shall be authorized by the Contractor to appear for that purpose as counsel or attorneys for him.

ARTICLE LVII. The Commission reserves the right of temporarily suspending the execution of the whole or any part of the work herein contracted to be done, if it shall deem it for the interest of the City so to do, without compensation to the Contractor for such suspension other than extending the time for completing the work as hereinbefore provided as much as, in the opinion of the Commission, it may have been delayed



#### TIME FOR COMPLETION, DAMAGES FOR DELAY, ETC.

by such suspension. The length of time (expressed in days or parts of days) during which the Works or any part thereof has been delayed by any act or omission on the part of the City (all which shall be determined by the Commission, which shall certify to the same in writing and whose determination and certificate thereof shall be binding and conclusive upon the Contractor) will be allowed to the Contractor and the times specified for the completion of the Works or such part thereof shall be extended by resolution of the Commission accordingly.

ARTICLE LVIII. Only the actual delay necessarily resulting from one or more of the causes above mentioned shall be ground for extension of time, and in case the Contractor shall be delayed at any time or for any period by two or more of the causes above mentioned, only one period of extension, if any, shall be granted for such delay and the Contractor shall not be entitled to a separate extension for each one of the causes so operating, it being understood that only the actual period of necessary delay, as determined by the Commission, irrespective of the number of causes contributing to produce such delay, will be ground for extension of time. In case the Contractor shall be actually and necessarily delayed from one or more of the causes above mentioned in the performance of any portion of the Works and not in the performance of the entire Works, then the extension of time to be granted to the Contractor shall be only for the portion of the Works as to which the Contractor shall be so delayed and the Contractor shall not be entitled by reason of such delay to an extension of time for the completion of the remainder of the Works, it being understood that if the Contractor shall be so delayed as to a portion of the Works he shall nevertheless proceed continuously and diligently with the prosecution of the remainder of the Works. No demand by the Contractor that the Commission determine and certify any matter of extension of time for the completion of the Works or any part thereof as aforesaid will be of any effect whatsoever unless the same be made in writing and duly served upon the Commission prior to the filing in the office of the Comptroller of the certificate of the completion

TIME FOR COMPLETION, DAMAGES FOR DELAY, ETC.

and acceptance of the part of the Works for which such extension is requested. The determination of the Commission as to any matter of extension of time for completion of the Works or any part thereof arising under this contract shall be binding and conclusive.

ARTICLE LIX. The permitting of the Contractor to go on and finish the work or any part of it after the time fixed for its completion or after the date to which the time for completion may have been extended or the making of payments to the Contractor after any of such periods shall in no wise operate as a waiver on the part of the City of any of its rights under this contract.



## CHAPTER IX

### REMEDIES IN CASE OF CONTRACTOR'S DEFAULT

ARTICLE LX. If the work to be done under this contract shall be abandoned by the Contractor, or if this contract shall be assigned or the work sublet by him otherwise than as herein specified, or if at any time the Engineer shall be of opinion, and shall so certify in writing to the Commission, that the performance of this contract is unnecessarily or unreasonably delayed or that the Contractor is wilfully violating any of the provisions or covenants of this contract or of the specifications or is not executing the same in good faith and in accordance with the terms hereof, or if the work be not completed within the time prescribed in this contract for its completion or within the time to which such completion may be extended by the Commission, or (in view of the necessity for special skill and ample financial resources in the prosecution of the work) if the Contractor shall become insolvent or bankrupt or if his property or affairs shall be put in the hands of a receiver or receivers, then and in any of such cases

(1) The Commission may notify the Contractor, by a written notice, to discontinue all work or any part thereof under this contract, and thereupon the Contractor shall discontinue the work or such part thereof, and the Commission shall thereupon have the right to contract for the completion of the Works or such part thereof in the manner prescribed by law or to place such and so many persons as it may deem advisable, by contract or otherwise, to work and complete the work herein described or such part thereof, to take possession of and use any or all of the materials, plant, tools, equipment, supplies and property of every kind provided by the Contractor for the pur-

pose of his work, and to procure other materials, plant, tools, equipment, supplies and property for the completion of the same, and to charge the expense of said labor, materials, plant, tools, equipment, supplies and property to the Contractor. The expense so charged may be deducted and paid by the City out of such moneys as may be due or may at any time thereafter grow due to the Contractor under and by virtue of this contract. And in case the expense of completing the Works or such part thereof shall exceed the amount which would have been payable under this contract for the same work and materials if this contract had been completed by the Contractor, he shall pay the amount of such excess with interest to the City; and in case such expense shall be less than the amount which would have been payable under this contract for the same work and materials if this contract had been completed by the Contractor, he shall forfeit all claim to the difference; and when any particular part of the work is being carried on by the Commission, by contract or otherwise, under the provisions of this Article, the Contractor, unless he shall have been directed to discontinue all work, shall continue the remainder of the work in conformity with the terms of this contract and in such manner as in nowise to hinder or interfere with other contractors of the Commission or with the persons or workmen employed, as above provided, by the Commission, by contract or otherwise, to do any part of the work or to complete the same under the provisions of this Article. The Contractor shall also in any and every such case in which the Commission shall complete the Works or any part thereof under the provisions of this Article, in addition to the liability above expressed, pay to the City as liquidated damages for any delay, resulting from the act, neglect, delay, fault or default of the Contractor, in the completion in all respects of the work covered by this contract the sum of fifty dollars (\$50) for each and every day, except Sundays and legal holidays, of such delay, which sum is hereby agreed upon not as a penalty but as liquidated damages which the City will suffer by reason of such delay. And

(2) The City may also proceed as to the Commission shall seem proper upon the Bond or other security in its possession. And



## REMEDIES IN CASE OF CONTRACTOR'S DEFAULT

(3) The City may also bring any suit or proceeding for specific performance or for injunction or to recover damages or to obtain any other relief or for any other purpose proper under this contract.

ARTICLE LXI. In case the Commission shall by contract or otherwise complete the Works or any part thereof under the provisions of Article LX, the Engineer, upon the completion of the Works or such part thereof or at any time thereafter upon demand in writing by either party hereto or from time to time during the course of the completion of the Works or such part thereof upon demand by the Commission, shall certify to the amount of the expense incurred by the City in the completion of the Works or such part thereof, and said certificate shall be final and conclusive and admissible in evidence against the Contractor in any litigation arising or growing out of this contract.

ARTICLE LXII. The City may avail itself of each and every remedy herein specifically given to the City or now or hereafter existing at law or in equity or by statute, and each and every such remedy shall be in addition to every other remedy so specifically given or otherwise so existing and may be exercised from time to time and as often and in such order as may be deemed expedient by the Commission, and the exercise, or the beginning of the exercise, of one remedy shall not be deemed to be a waiver of the right to exercise, at the same time or thereafter, any other remedy, except that no two inconsistent remedies shall be exercised at the same time.

## CHAPTER X

### MISCELLANEOUS PROVISIONS

ARTICLE LXIII. No correction or change in this contract shall be made except by written instrument duly authorized by the Commission and consented to by the Contractor and by the sureties upon his bond; but this provision shall not limit or affect the right to prescribe variations whether of construction or of location of route as in this contract elsewhere provided.

ARTICLE LXIV. No claim shall be made by the Contractor against any member of the Commission personally under or by reason of this contract or any of its articles or provisions.

ARTICLE LXV. The Contractor shall not assign, transfer, convey, sublet or otherwise dispose of this contract or his right, title or interest in or to the same or any part thereof without the previous consent in writing of the Commission, and he shall not assign by power of attorney or otherwise any of the moneys to become due and payable under this contract unless by and with the like consent. If the Contractor shall without such previous written consent assign, transfer, convey, sublet or otherwise dispose of this contract or of his right, title or interest therein or any of the moneys to become due under this contract, to any other person, company or corporation, this contract may at the option of the Commission be revoked and annulled and the City shall thereupon be relieved and discharged from any and all liability and obligations growing out of the same to the Contractor and to his assignee or transferee; and no right under this contract or to any money to become due hereunder shall be asserted against the City in law or in equity by reason of any so-called assignment of this contract or any part thereof or of any moneys to grow due hereunder unless authorized as aforesaid by the written consent of the Commission; pro-



## MISCELLANEOUS PROVISIONS

vided that nothing herein contained shall be construed to hinder, prevent or affect an assignment by the Contractor for the benefit of his creditors made pursuant to the statutes of the State of New York.

ARTICLE LXVI. In case the Commission shall cease to exist, the Legislature may provide what public officer or officers shall exercise the powers and duties of the Commission under and by virtue of this contract; and in default of such provision, such powers and duties shall be deemed to be vested in the Mayor of the City. In case any officer or officers other than the Commission shall hereafter have the powers of the Commission or any of them, then the provisions of this contract shall be applicable to such officer or officers to the extent to which the powers of the Commission shall appertain to such officer or officers, and any official act or determination of such officer or officers or of the Commission shall be sufficient hereunder, anything herein to the contrary notwithstanding, if the same be done or had by lawful vote or resolution or in such manner as the Legislature may from time to time prescribe.

ARTICLE LXVII. The Contractor agrees to comply with the provisions of the Labor Law, including Section Three thereof as re-enacted by Chapter 36 of the Laws of 1909. The Contractor further agrees and stipulates that no laborer, workman or mechanic in the employ of the Contractor, subcontractor or other person doing or contracting to do the whole or a part of the work contemplated by this contract shall be permitted or required to work more than eight hours in any one calendar day, except in cases of extraordinary emergency caused by fire, flood or danger to life or property; and further that the wages to be paid for a legal day's work as hereinbefore defined to all classes of such laborers, workmen or mechanics upon the work contemplated by this contract or upon any material to be used upon or in connection therewith, shall be not less than the prevailing rate for a day's work in the same trade or occupation in the Borough of the City where the work hereby contemplated about or in connection with which such labor is performed in its final or

#### MISCELLANEOUS PROVISIONS

completed form is to be situated, erected or used; and that each such laborer, workman or mechanic employed by the Contractor or by any subcontractor or other person on, about or upon the work contemplated by this contract, shall receive such wages herein provided for. This contract shall be void and of no effect unless the Contractor shall comply with the provisions of this section. In obedience to the requirements of Section Fourteen of the Labor Law it is further provided that if the provisions of the said Section Fourteen are not complied with, this contract shall be void.

ARTICLE LXVIII. It is the intent and understanding of the parties to this contract that each and every provision of law required to be inserted in this contract should be and is inserted herein. Furthermore, it is hereby stipulated that every such provision is to be deemed to be inserted herein, and if, through mistake or otherwise, any such provision is not inserted or is not inserted in correct form, then this contract shall forthwith, upon the application of either party, be amended by such insertion so as to comply strictly with the law and without prejudice to the rights of either party hereunder.

ARTICLE LXIX. If this contract contains any unlawful provision not an essential part of the general structure of the contract and which shall not appear to have been a controlling or very material inducement to the making thereof, the same shall be deemed of no effect and shall upon the application of either party be stricken from the contract without affecting the binding force of the contract as it shall remain after omitting such provision.



TESTIMONIUM

. In Witness Whereof, this contract has been executed for THE CITY OF NEW YORK by the PUBLIC SERVICE COMMISSION FOR THE FIRST DISTRICT under and by virtue of a resolution duly adopted by the Commission and the seal of the Commission has been hereto affixed and attested by its Secretary and these presents have been signed by its Chairman; and the CONTRACTOR has \* [hereunto set hand and seal ] [caused corporate seal to be hereto affixed and these presents to be executed by proper officers] the day and year first above written.

THE CITY OF NEW YORK

by the

PUBLIC SERVICE COMMISSION FOR THE FIRST DISTRICT

by

*Chairman*

Attest

*Secretary*

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\*If the Contractor be an individual, use the words enclosed in the first bracket; if a corporation, use the words enclosed in the second bracket.

### ACKNOWLEDGMENT FOR COMMISSION

STATE OF NEW YORK, }  
County of New York, } ss.:

On the                    day of                    , 1915, before me personally appeared Edward E. McCall and Travis H. Whitney, to me known and known to me to be the said Edward E. McCall, the Chairman, and the said Travis H. Whitney, the Secretary of the Public Service Commission for the First District; and the said Edward E. McCall and Travis H. Whitney being by me duly sworn, did depose and say, each for himself and not the one for the other, the said Edward E. McCall, that he resides in the Borough of Manhattan, in the City, County and State of New York, that he is the Chairman of the said Commission and that he subscribed his name to the foregoing contract by virtue of the authority thereof; and the said Travis H. Whitney, that he resides in the Borough of Brooklyn, in the County of Kings, City and State of New York, that he is the Secretary of the said Commission and that he subscribed his name thereto by like authority; and both the said Edward E. McCall and Travis H. Whitney that they know the seal of the said Commission and that one of the seals affixed to the foregoing contract is such seal and that the same was affixed to the foregoing contract by the authority of the said Commission and by a resolution duly adopted by the same.



### ACKNOWLEDGMENTS FOR CONTRACTOR

STATE OF NEW YORK, }  
County of New York, } ss.:

On this                    day of                    , 1915, before me personally came                    to me known and known to me to be the individual described in                    and who executed the foregoing instrument, and                    he duly acknowledged to me that he executed the same.

STATE OF NEW YORK, }  
County of New York, } ss.:

On this                    day of                    , 1915, before me personally appeared                    to me known, who, being by me first duly sworn, did depose and say: That he resides in                    in the State of                    ; that he is                    of                   

the corporation described in and which executed the foregoing instrument; that he knows the corporate seal of said corporation; that one of the seals affixed to said contract is such corporate seal, and that it was affixed thereto by order of the Board of Directors of said corporation, and that he signed his name thereto by like authority.

## SCHEDULE OF SECURITIES

(NOTE.—If the Contractor, upon the approval of the Commission, deposits securities in lieu of a bond, a description of such securities with their values shall be inserted below.)



FORM OF  
CONTRACTOR'S BOND

For Construction of a Storm Drain for the  
QUEENSBORO SUBWAY RAPID TRANSIT  
RAILROAD

## FORM OF CONTRACTOR'S BOND

STORM DRAIN FOR QUEENSBORO SUBWAY RAPID TRANSIT RAIL-  
ROAD

Know all Men by these Presents, That

of  
hereinafter called the **Contractor** and  
and

hereinafter called the Sureties are held and firmly bound unto The City of New York, hereinafter called the City, in the sum of three thousand dollars (\$3,000) lawful money of the United States of America, to be paid to the City, for which payment well and truly to be made the Contractor and the Sureties do hereby bind themselves and their, and each of their, executors, administrators, successors and assigns firmly by these presents, as follows: The Contractor to be so held and bound for the full amount of the said sum of three thousand dollars (\$3,000) and each of the said Sureties to be so held and bound only for a portion of said sum as follows:

The said \_\_\_\_\_  
for the sum of \_\_\_\_\_  
dollars (\$ \_\_\_\_\_); the said \_\_\_\_\_  
for the sum of \_\_\_\_\_  
dollars (\$ \_\_\_\_\_); the said \_\_\_\_\_  
for the sum of \_\_\_\_\_  
dollars (\$ \_\_\_\_\_); and the said \_\_\_\_\_  
for the sum of \_\_\_\_\_  
dollars (\$ \_\_\_\_\_).

IN WITNESS WHEREOF, The Contractor and the Sureties have hereunto set their hands and seals and such of them as are corporations have caused their respective seals to be hereto affixed and these presents to be attested by the proper officers, this \_\_\_\_\_ day of \_\_\_\_\_, 1915.



FORM OF CONTRACTOR'S BOND

WHEREAS, The City by the Public Service Commission for the First District (hereinafter called the Commission) is about to enter into a contract with the Contractor bearing even date herewith for the construction by the Contractor of a Storm Drain for the Queensboro Subway Rapid Transit Railroad extending under Queens Boulevard from Hill Street to Gosman Avenue, in the Borough of Queens, in the City of New York, more particularly described in the said contract; and

WHEREAS, The City is about to enter into such contract with the Contractor upon the condition, and not otherwise, that this Bond shall be given to the City, and upon the faith hereof,

NOW, THEREFORE, the condition of the foregoing obligation is such that if the Contractor shall faithfully perform all the conditions, covenants and requirements specified and provided for in said contract, then this obligation shall be null and void, but else it shall remain in full force and virtue.

IT IS EXPRESSLY AGREED between the City and the Sureties (and it is only upon such agreement that the City accepts this Bond) that the Sureties will and do waive any and every notice of default on the part of the Contractor; that they will and do permit the City to extend the time of the Contractor to do any act; that no omission on the part of the City to give any notice of extension of time granted by or on behalf of the City shall be availed of by the Sureties or any of them as a defense upon this Bond; that the Sureties shall not set up or have any defense upon this Bond by reason of any alteration of the said contract unless such alteration shall be represented by a formal written instrument duly executed between the City and the Contractor which shall have been duly authorized by a vote of the Commission and entered into without the consent of the Sureties; and that in case of such alteration, however made, the same shall be a defense to the Sureties only to the extent of the actual injury or damage caused to the Sureties by said alteration.





FORM OF  
CONTRACTOR'S PROPOSAL

For Construction of a Storm Drain for the  
QUEENSBORO SUBWAY RAPID TRANSIT  
RAILROAD

## CONTRACTOR'S PROPOSAL

### FOR THE CONSTRUCTION OF A STORM DRAIN FOR THE QUEENSBORO SUBWAY RAPID TRANSIT RAILROAD

NOTICE.—*There must remain annexed hereto:*

*Copy of Invitation to Contractors*

*Copy of Information for Contractors*

*Copy of Form of Contract*

*Copy of Form of Bond*

*To the*

Public Service Commission for the First District:

(1) The undersigned\*

do hereby, in pursuance of the Invitation to Contractors and the Information for Contractors, copies of which are attached hereto and made a part hereof, propose according to the terms thereof to enter into a contract in the form annexed hereto and made a part hereof with The City of New York (hereinafter called the "City") for the construction of a Storm Drain for the Queensboro Subway Rapid Transit Railroad and to furnish all necessary labor, materials, plant, power, tools, supplies and other means of construction and perform all the work mentioned in the said contract at the prices for the several items as given in the following Schedule of Unit Prices or as otherwise provided in the form of contract. It is understood that the quantities of various items specified in the following schedule are approximate only and are given as a basis for the uniform comparison of bids and are not in any way guaranteed or represented as correct or intended to be relied upon, and they shall not be taken as final and shall form no basis for any claim in case they do not correspond with the final measurements or quantities. It is further understood that the Commission reserves the right to increase or to diminish or to omit entirely any of the quantities of items as therein stated.

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\* The bidder's name must be inserted here. If the bid is submitted by a corporation, the full legal title must be given here and a certified copy of the certificate of incorporation must be submitted, together with an affidavit showing the amount of stock paid in in cash and the names and addresses of the directors and principal officers. If the bidder be a foreign corporation, proof must also be submitted of its authority to transact business in the State of New York. In case the bidder has already filed such papers with the Commission in connection with another bid he may so state and omit such papers in this instance. If the bid is submitted by a firm, the above blank must be filled in in the following form, "the firm of A. B. & Co., composed of A., B., C., D., etc." (giving the names of all the partners).



# CONTRACTOR'S PROPOSAL

Item	Classification	Unit Price	Estimated Approximate Quantities	This column not to be used by Bidder Amount
2-A..	For earth excavation, both above and below mean high water, including the disposal of it, etc., per cubic yd..		6,600	
3-A..	For rock excavation, including the disposal of it, etc., per cubic yd....		100	
6....	For concrete masonry, in place, per cubic yd.....		55	
13....	For timber foundations, placed and fastened, per thousand ft. B. M....		2	
14....	For broken stone or gravel, in place, other than that used in concrete, per cubic yd.....		20	
17....	For vitrified or cast-iron drain pipe, in place, as follows:			
	(a) For 12-inch vitrified pipe, per lineal ft.....		1,600	
	(b) For 10-inch vitrified pipe, per lineal ft.....		400	
	(c) For 8-inch vitrified pipe, per lineal ft.....		1,700	
	(d) For 6-inch vitrified pipe, per lineal ft.....		1,900	
	(j) For 15-inch vitrified pipe, per lineal ft.....		900	
17-A.	For cast-iron pipe and fittings, including specials, "extra heavy," in place, as follows:			
	(c) For 6-inch, per lineal ft.....		700	
	(f) For 12-inch, per lineal ft.....		25	
21....	For steel rods and bars built in concrete, per ton.....		1	
25....	For miscellaneous iron castings, such as manhole heads and covers, gratings, etc., in place, per ton.....		7	
30....	For street surface restored, as follows:			
	(h) For all surfaces of whatever character, as required by Section No. 139, per square yd.....		150	
	(o) For restoring old curb, as required by Section No. 139, per lineal ft. ....		100	

## CONTRACTOR'S PROPOSAL

(2) If this Proposal is accepted and the proposed contract consented to by the Board of Estimate and Apportionment, the undersigned will within three (3) days after the delivery of notice attend at the office of the Commission, in person or by duly authorized representative, and will then and there deliver the contract with the City in the form aforesaid duly executed and with its execution duly proved; and the undersigned will at the same time deliver to the Comptroller of the City pursuant to the terms of said contract *a bond in the sum of three thousand dollars (\$3,000) in the form annexed hereto and made a part hereof with the following named sureties, or, in the event that the following named sureties or any of them shall not be approved by the Commission, with such other sureties as the Commission shall approve: \**

It is understood that the acceptance of this Proposal by the Commission shall not be construed as an approval of the sureties or securities named in this Proposal, and in case the sureties or securities named in this Proposal are not approved by the Commission, the undersigned, within three (3) days after notice of disapproval or within such further period, if any, as may be prescribed by the Commission, shall substitute the names of other sureties or securities approved by the Commission.

(3) If the Commission shall notify the undersigned that this Proposal is accepted and that the proposed contract is consented to by the Board of Estimate and Apportionment, then if the undersigned shall fail within three (3) days thereafter or within

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\* The bidder may, under the Rapid Transit Act, upon the approval of the Commission, deposit cash or securities in lieu of a bond; and the bidder, if desirous of so doing, shall so state here and shall strike out the words in italics and shall insert in the Schedule of Securities following the description of the securities proposed to be deposited. If securities are to be deposited, they must be securities which are lawful for the investment of funds of saving banks within the State of New York, and must be approved by the Commission. If a bond is to be delivered, the names of the proposed sureties shall be inserted here.



## CONTRACTOR'S PROPOSAL

such further period, if any, as may be prescribed by the Commission to execute and deliver the contract or to execute and deliver the said bond or to make the said deposit in cash or securities, the undersigned may, at the option of the Commission, be deemed either to have made the contract or to have abandoned the contract. And in the latter case the Commission may give notice thereof to the undersigned and may thereupon proceed to make another contract with such, if any, of the original bidders as, in the opinion of the Commission, it will be to the best interests of the City to contract with or may by new advertisement invite further proposals, and the undersigned shall thereupon be liable to the City for all loss and damage sustained by the City by reason of such failure of the undersigned. Inasmuch as the amount of such loss and damage will be extremely difficult to ascertain, it is expressly understood and agreed that such loss and damage shall be liquidated and paid as follows: The undersigned shall pay to the City the expense of such new advertisement, if any, and in addition thereto the sum of fifty dollars (\$50) for each and every day, except Sundays and legal holidays, that the City shall be delayed in entering into a contract for the construction of said Storm Drain by reason of such failure of the undersigned and in addition thereto the excess, if any, of the amount of the bid, calculated from the quantities and prices contained in the proposal, which the City shall accept and upon which it shall enter into a contract for the construction of said Storm Drain over the amount of the bid, calculated from the quantities and prices contained in this Proposal, of the undersigned; which sums are hereby agreed upon not as a penalty but as liquidated damages which the City will suffer by reason of such failure of the undersigned. And the Invitation to Contractors and the Information for Contractors and this Proposal shall constitute a contract binding the undersigned to pay to the City the loss and damage sustained by the City by reason of such failure of the undersigned, as aforesaid.

(4) At the time of delivering this Proposal to the Commission the undersigned will separately deliver a certified check payable to the order of the Comptroller of the City for the sum of

## CONTRACTOR'S PROPOSAL

one thousand dollars (\$1,000). And the undersigned hereby assigns to the City the said sum so specially deposited by the delivery of such certified check as security for the performance of the obligations of the undersigned under this Proposal. It is understood that such check is to be returned to the undersigned when the contract for the construction of said Storm Drain is executed and its provisions in respect of the bond or deposit are complied with, unless all the proposals submitted in response to said Invitation to Contractors shall be rejected by the Commission, and in that case when such proposals are rejected, as provided in the Information for Contractors. In case the undersigned shall default in the performance of any of the obligations of the undersigned under this Proposal, the City shall have the right to apply the amount so specially deposited or so much thereof as may be necessary as a payment on account of the damages sustained by the City by reason of such default as aforesaid and shall return the balance, if any, to the undersigned. If the amount of such damages shall exceed the amount of said sum so specially deposited, the undersigned shall promptly upon demand from the Commission pay the amount of said excess to the City.

(5) A notice that this Proposal has been accepted and that the said contract has been consented to by the Board of Estimate and Apportionment addressed to the undersigned by the Commission as aforesaid shall forthwith, at the option of the Commission, operate as against the undersigned as a complete making of a contract according to the form thereof as aforesaid, with the blanks therein contained filled in according to this Proposal.

(6) The Commission may cause any notice intended for the undersigned to be delivered at Room No. \_\_\_\_\_ on the \_\_\_\_\_ floor of the building, No. \_\_\_\_\_ in the Borough of \_\_\_\_\_ in the City of New York. Such delivery shall be sufficient notice to the undersigned.

(7) There are no persons interested with the undersigned in this Proposal, except \*

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\* Here insert the names and addresses of all persons interested with the bidder. If there are no such persons strike out the word "except."



## CONTRACTOR'S PROPOSAL

(8) This Proposal is made without any connection with any other person making a proposal or bid for the same purpose and is in all respects fair and without collusion or fraud. No member of the Board of Aldermen, head of department, chief of bureau, deputy thereof or clerk therein or other officer of the City or any member or employee of the Commission is interested directly or indirectly, as contracting party, partner, stockholder or otherwise, in or in the performance of the contract or in the supplies, work or business to which it relates or in any portion of the profits thereof.

Dated†

1915.

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† The bidder must sign his proposal on this page.

## CONTRACTOR'S PROPOSAL

### SCHEDULE OF SECURITIES

(Note.—If the bidder desires not to give a bond, but to deposit securities in lieu thereof, a description of the securities to be deposited for that purpose must be inserted below.

All securities when delivered must be payable to, or run in favor of, or be transferred to, the Comptroller of The City of New York.)



CONTRACTOR'S PROPOSAL

*Affidavit of Verification*

STATE OF NEW YORK, }  
City and County of New York, } ss.:

being duly

sworn, says: I am\*

the proposing Contractor above named. I have read the foregoing proposal. The same is in all respects true.

Sworn to before me this }  
day of , 1915 }

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\* If the bidder be an individual, do not fill this blank; if the bidder be a firm, here say, "a member of the firm of \_\_\_\_\_"; if a corporation, say "the (President or other officer duly authorized) of the \_\_\_\_\_ Company."























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